

# **EXHIBIT 1**

**UNITED STATES DISTRICT COURT  
EASTERN DISTRICT OF TENNESSEE  
KNOXVILLE DIVISION**

WORLDWIDE INTERACTIVE NETWORK, INC., |

Plaintiff,

v.

CHMURA ECONOMICS & ANALYTICS, LLC,

Defendant.

Case No. 3:09-CV-00121  
Phillips/Guyton

**AFFIDAVIT OF TERESA C. CHASSEEN, PH.D.**

I, Teresa C. Chasteen, declare and state under the penalty of perjury the following:

1. I am the President and CEO of Worldwide Interactive Network, Inc. (hereinafter "WIN").
2. It is my understanding and belief that Christine Chmura, Ph.D., is a principal, the president, and the chief economist of Chmura Economics & Analytics, LLC (hereinafter "CEA").
3. It is my understanding and belief that Leslie Peterson is a principal and the director of operations of CEA.
4. CEA alleged that it is the owner of United States Patent Number 7,480,659 issued to Chmura et al. on January 20, 2009 (hereinafter "the '659 patent"). The '659 patent is attached hereto as Exhibit A.
5. On or about September 13, 2006, CEA forwarded WIN a partially executed agreement titled *Developing a "Strategic Compass" Template for Workforce and Economic Strategic Planning* (hereinafter "the Joint Development Agreement"). A copy of the Joint Development Agreement is attached hereto as Exhibit B.
6. On or about September 14, 2006, WIN and CEA entered into a contractual business relationship by way of the Joint Development Agreement. Under the Joint Development Agreement, CEA developed and maintained a server-based economic,

education, and workforce development tool, referred to as JobsEQ, for WIN's use and promotion.

7. CEA alleged that certain of the underlying technology of JobsEQ is protected by the '659 patent.

8. On or about October 9, 2006, CEA started invoicing WIN at its Tennessee address for services provided by CEA and continued to invoice WIN at its Tennessee address until approximately March 28, 2009. Within this time frame, CEA invoiced WIN approximately forty three (43) times, the invoices being substantially evenly distributed across the time frame. CEA's invoices are attached hereto as Exhibit C.

9. On or about February 15, 2008, CEA hosted and conducted a training session relating to JobsEQ, including technology allegedly protected by the '659 patent, at the Tennessee Technology Center located in Harriman, Tennessee.

10. On or about February 15, 2008, CEA forwarded WIN a partially executed agreement, under which CEA provided WIN ongoing and continuing services relating to a particular application provided by JobsEQ. This agreement is hereinafter referred to as the Retainer Agreement and is attached hereto as Exhibit D.

11. As specified in the Retainer Agreement, CEA accessed WIN's servers, which were and are located at WIN's home office in Kingston, Tennessee, to perform its services under the Retainer Agreement.

12. On or about October 22, 2008, CEA hosted and conducted a training session relating to JobsEQ, including technology allegedly protected by the '659 patent, at the Roane State Community College campus located in Harriman, Tennessee.

13. In 2008, the business relationship between WIN and CEA began to deteriorate, and WIN and CEA began adversarial negotiations in an attempt to resolve unsettled contractual issues. WIN hired John Brock of Gentry, Tipton & McLemore, P.C., to represent WIN in these negotiations.

14. In view of the failing business relationship, WIN contracted Iradix, LLC (hereinafter "Iradix") to independently develop a server-based economic, education, and workforce development tool to replace JobsEQ. The server-based development tool

developed by Iradix is owned solely by WIN and is hereinafter referred to as WIN's server-based development tool.

15. During the course of the above-discussed negotiations between WIN and CEA, Mr. Brock reported to me that CEA, by and through its legal counsel, namely Genevieve Dybing of McCandlish Holton, P.C., expressed its belief and concern that WIN was developing a server-based economic, education, and workforce development tool to replace JobsEQ. Mr. Brock also reported that Ms. Dybing indicated that CEA intended to initiate legal action against WIN to enforce the '659 patent when WIN introduced its server-based development tool to the market.

16. On or about March 9, 2009, Katherine DeRosear, Strategic Policy Advisor of WIN, reported to me that while attending a National Association of Workforce Boards Forum in Washington D.C. (hereinafter "the NAWB Forum"), CEA, by and through its president, namely Ms. Chmura, asserted to Danny Allen, a NWAB board member and trial attorney of South Carolina, that WIN would "need a trial attorney" when WIN introduced its server-based development tool to the market.

17. On or about March 10, 2009, Dr. Tim Alford, an independent consultant hired by WIN, reported to me that while attending the NWAB Forum, CEA, by and through its president and director of operations, namely Ms. Chmura and Ms. Peterson, respectively, cautioned Dr. Alford of his involvement in the development of WIN's server-based development tool and expressed CEA's intent to initiate legal action against WIN to enforce the '659 when WIN introduced its server-based development tool to the market.

18. In a letter addressed to Dr. Fletcher Mangum, an independent consultant hired by WIN, CEA cautioned Dr. Fletcher of his involvement in the development of WIN's server-based development tool and implied CEA's intent to initiate legal action against WIN to enforce the '659 patent in the event WIN introduced its server-based development tool to the market. A pertinent portion of this letter is attached hereto as Exhibit E.

19. WIN introduced its server-based development tool to the market on or about March 19, 2009.

20. In view of the above-discussed occurrences and threats, I had an apprehension that CEA would initiate legal action against WIN to enforce the '659 patent when WIN introduced its server-based development tool to the market.

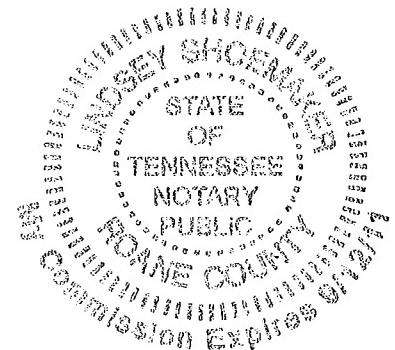


Teresa C. Chasteen, Ph.D.  
CEO, Worldwide Interactive Network, Inc.

IN THE COUNTY OF ROANE  
STATE OF TENNESSEE

I hereby certify that before me personally appeared TERESA C. CHASTEEN, personally known by me, who then and there was duly sworn by me, and under oath acknowledges that the foregoing instrument was duly signed, sealed and delivered by him on the date appearing at the foot thereof, all of which took place within my jurisdiction.

Lindsey Shoemaker  
Notary Public  
My Commission Expires: 9/12/11



# **EXHIBIT A**



US007480659B2

(12) **United States Patent**  
**Chmura et al.**

(10) **Patent No.:** US 7,480,659 B2  
(45) **Date of Patent:** Jan. 20, 2009

(54) **SYSTEM AND METHOD FOR MANAGING ECONOMIC DEVELOPMENT, WORKFORCE DEVELOPMENT AND EDUCATION INFORMATION**

(75) Inventors: **Christine Chmura**, Richmond, VA (US); **Leslie Peterson**, Richmond, VA (US)

(73) Assignee: **Chmura Economics & Analytics, LLC**, Richmond, VA (US)

(\*) Notice: Subject to any disclaimer, the term of this patent is extended or adjusted under 35 U.S.C. 154(b) by 213 days.

(21) Appl. No.: **11/251,811**

(22) Filed: **Oct. 18, 2005**

(65) **Prior Publication Data**

US 2006/0085455 A1 Apr. 20, 2006

**Related U.S. Application Data**

(60) Provisional application No. 60/619,861, filed on Oct. 18, 2004.

(51) **Int. Cl.**

**G06F 7/00** (2006.01)  
**G06F 17/30** (2006.01)

(52) **U.S. Cl.** ..... 707/10; 707/100

(58) **Field of Classification Search** ..... 705/7, 705/10; 707/104.1, 109.1

See application file for complete search history.

(56) **References Cited**

**U.S. PATENT DOCUMENTS**

7,054,864 B1 \* 5/2006 Toomey ..... 707/10  
2004/0236598 A1 \* 11/2004 Thomsen ..... 705/1

\* cited by examiner

*Primary Examiner*—Wilson Lee

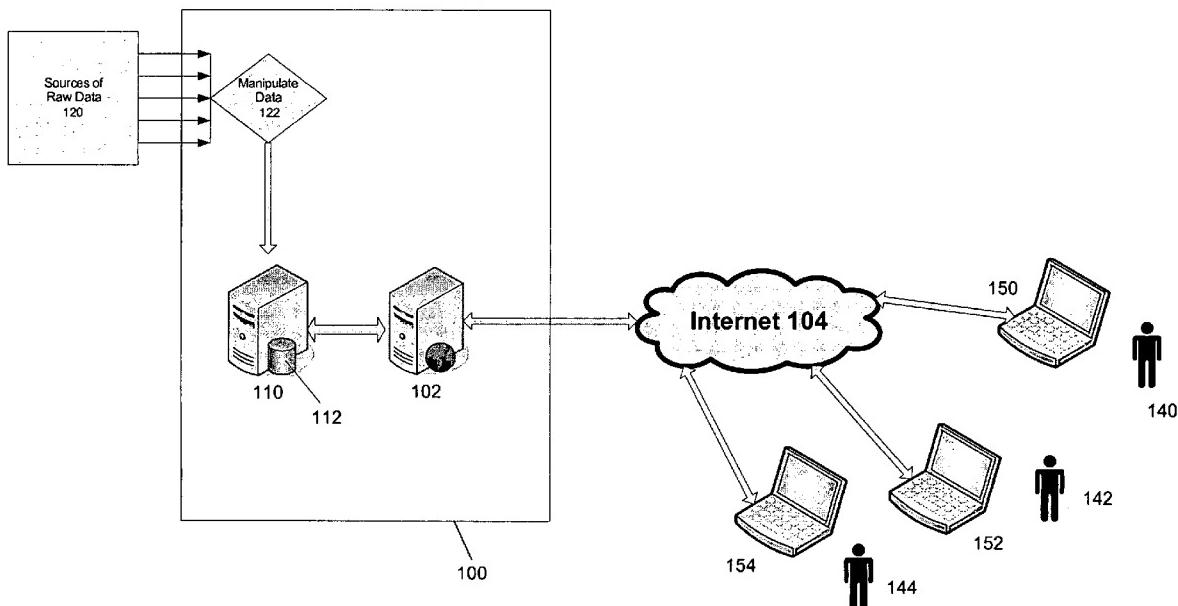
*Assistant Examiner*—Nicholas E Allen

(74) *Attorney, Agent, or Firm*—Smith, Gambrell & Russell

(57) **ABSTRACT**

Economic development and workforce development information, such as historical and forecasted economic data regarding economic variables including but not limited to jobs, unemployment, wages, and/or productivity, etc., and/or any changes therein are stored in a database. Access to the data stored in the database is provided via a web portal running on a data server coupled to the Internet. Users access the data using a web browser client. Data stored in the database are updated from time to time, such as, for example, monthly and/or quarterly. User tools are provided for assembling and processing the data in ways meaningful to the user.

**20 Claims, 35 Drawing Sheets**



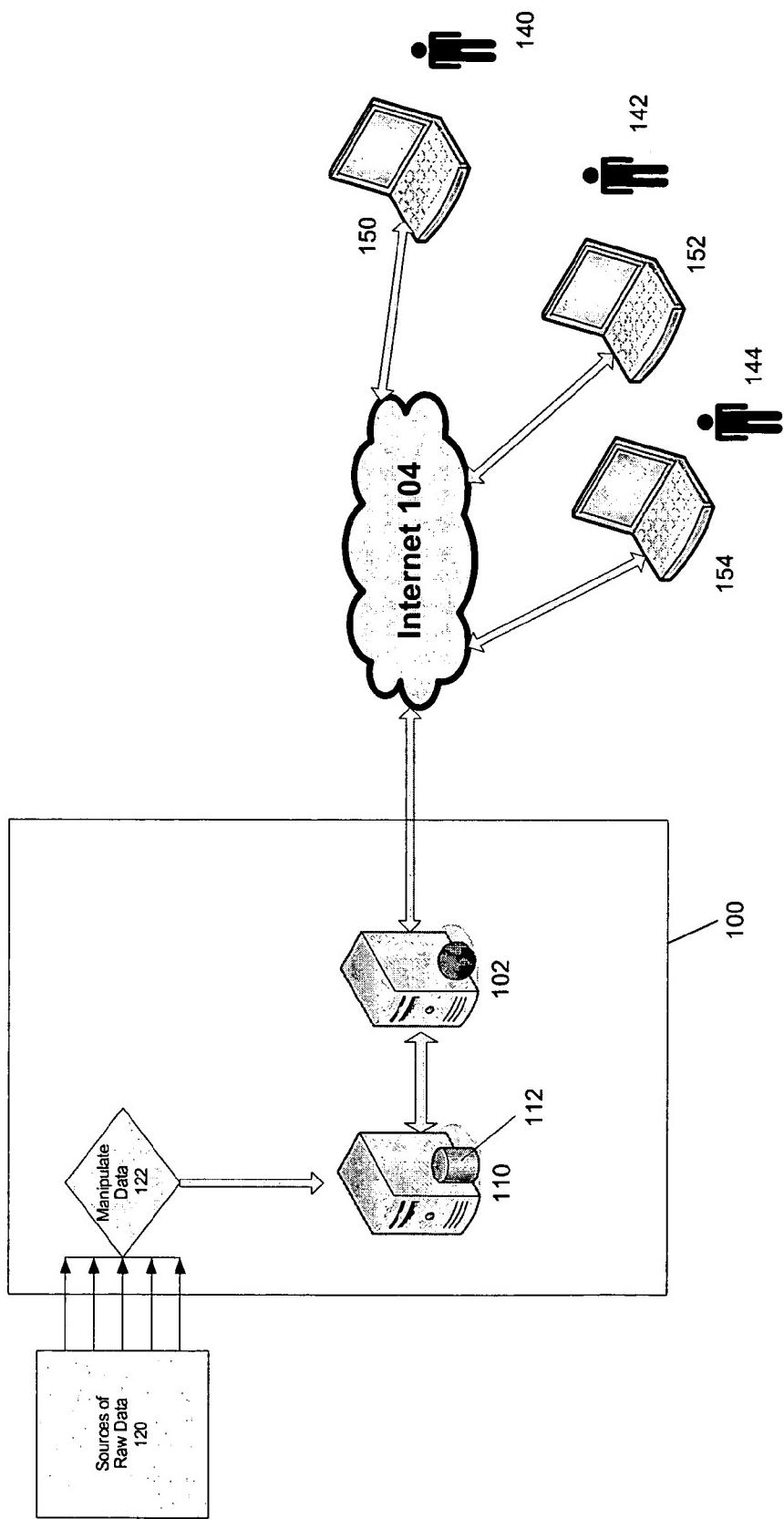


Figure 1

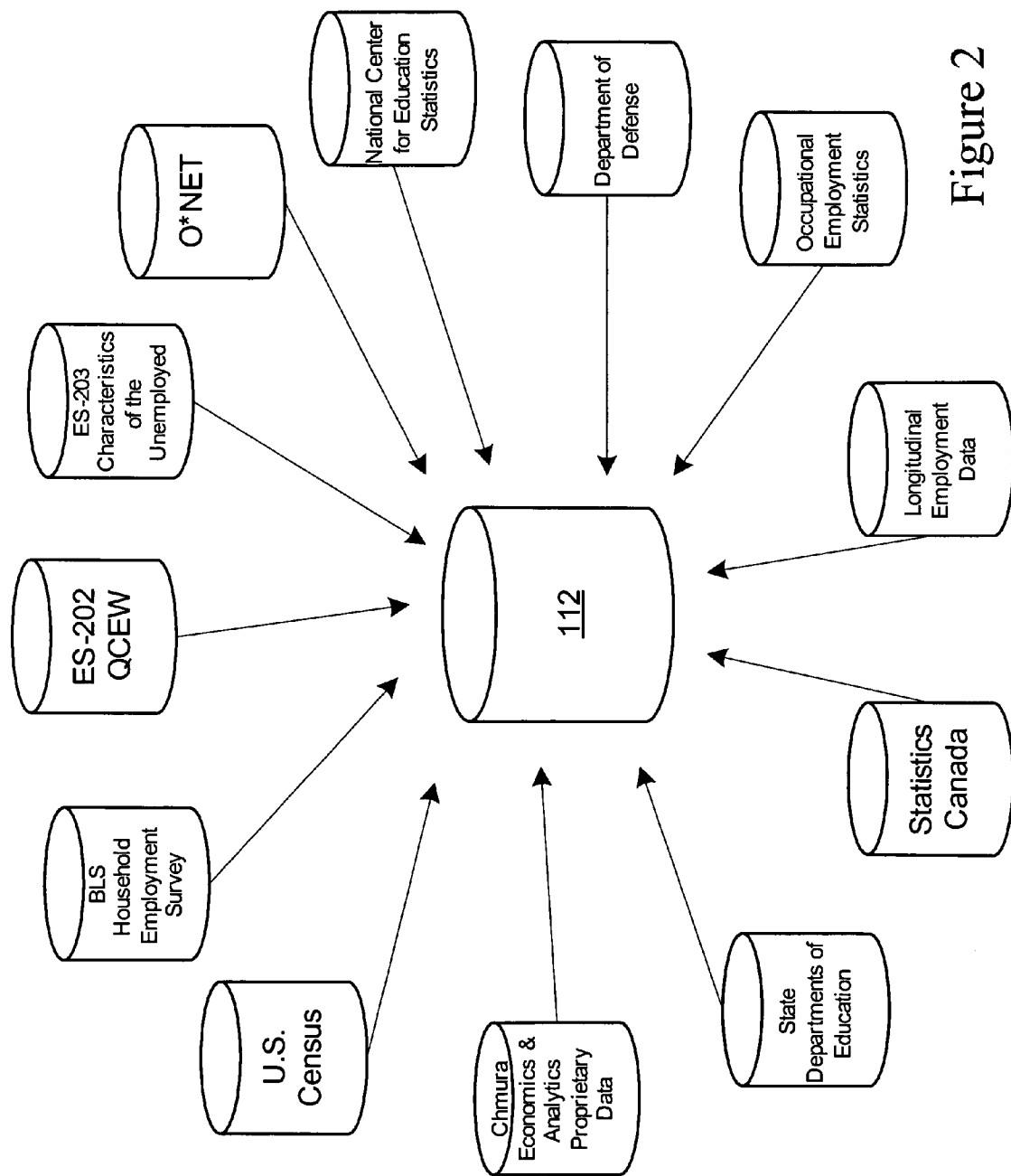
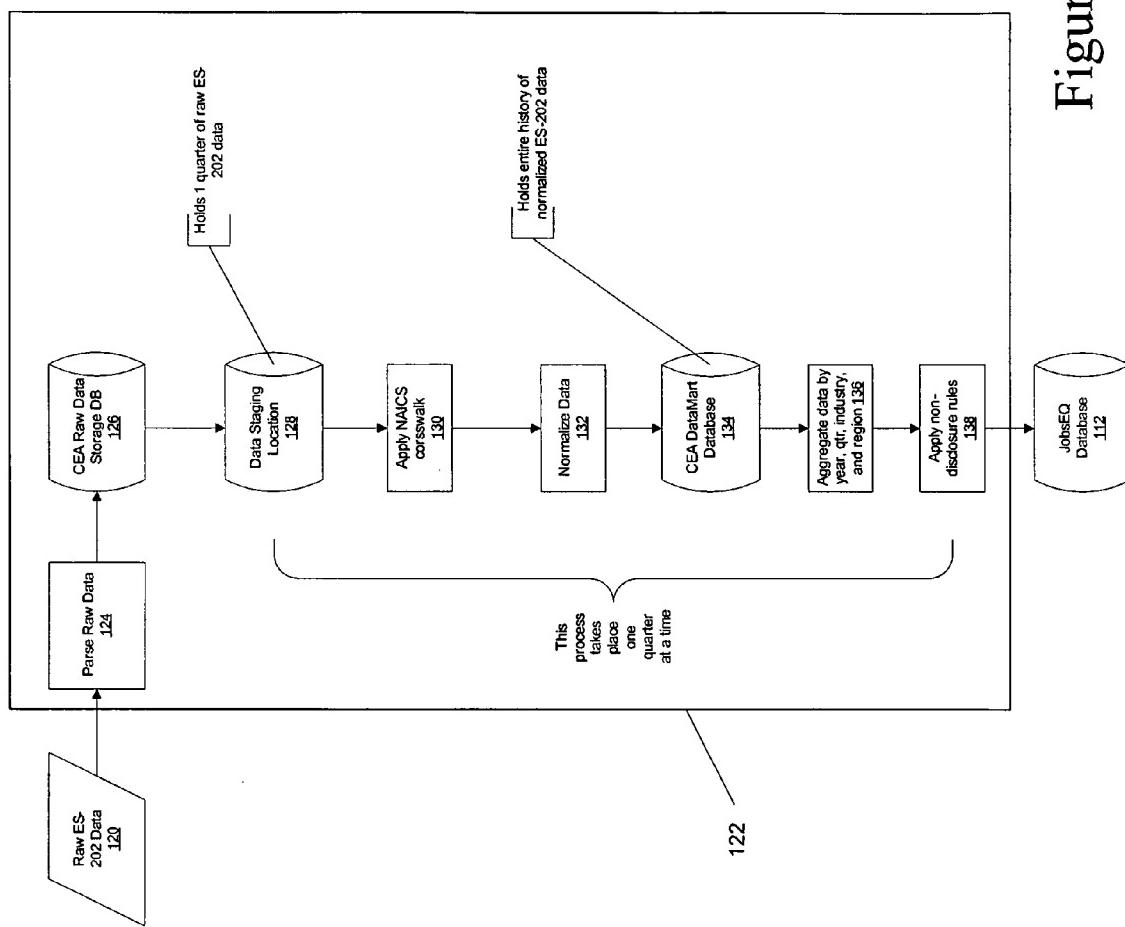


Figure 2

Figure 3



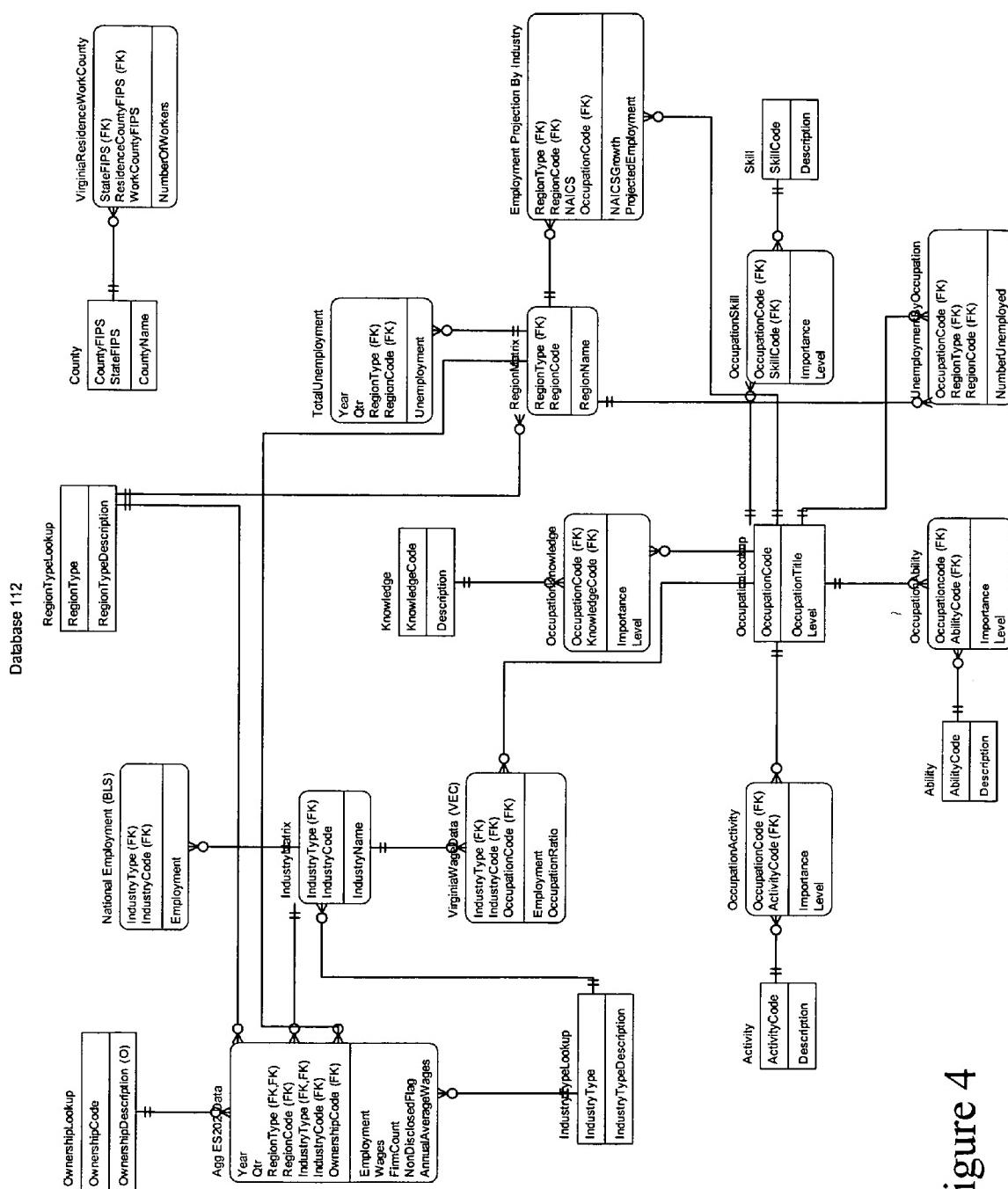


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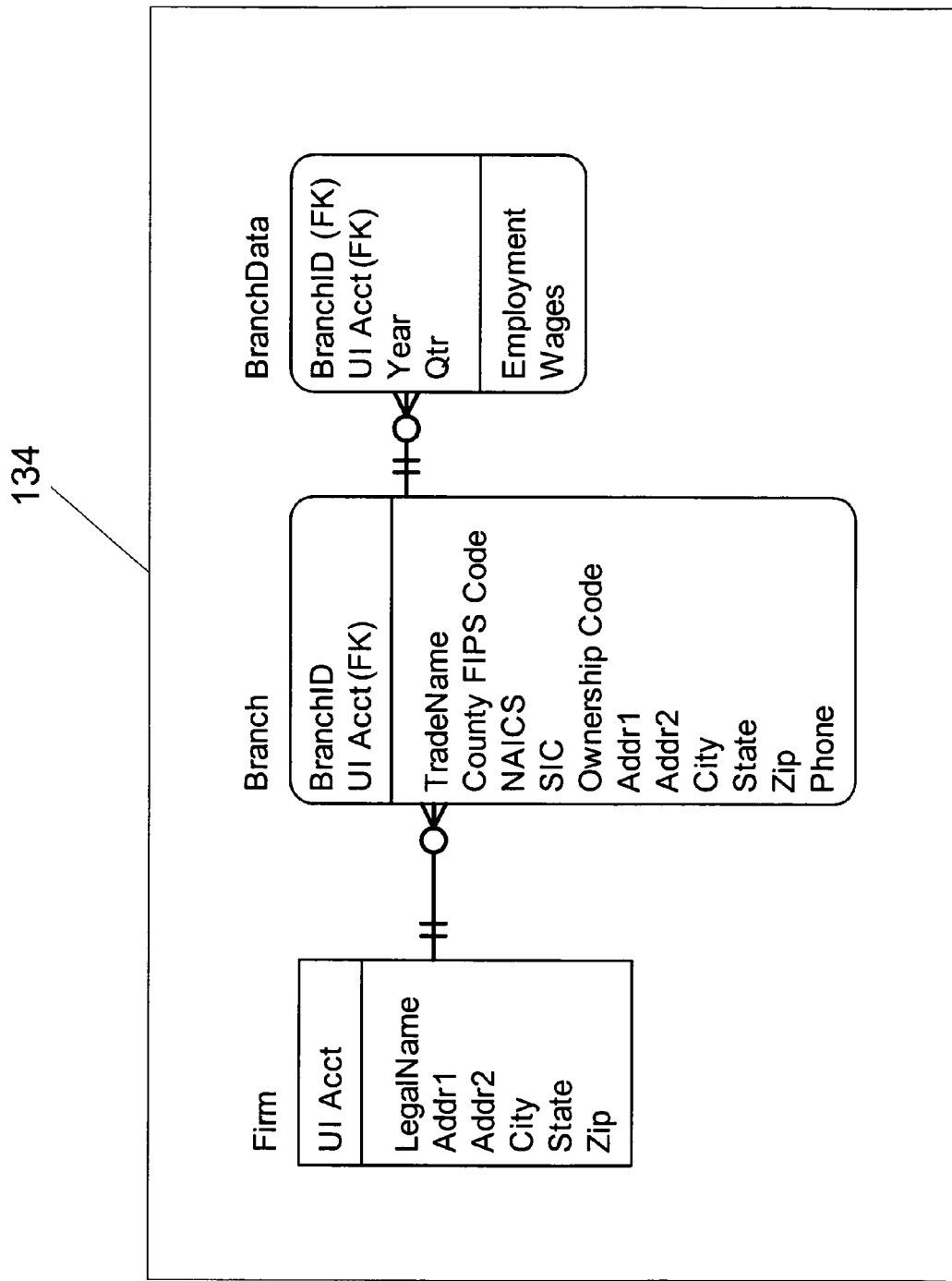


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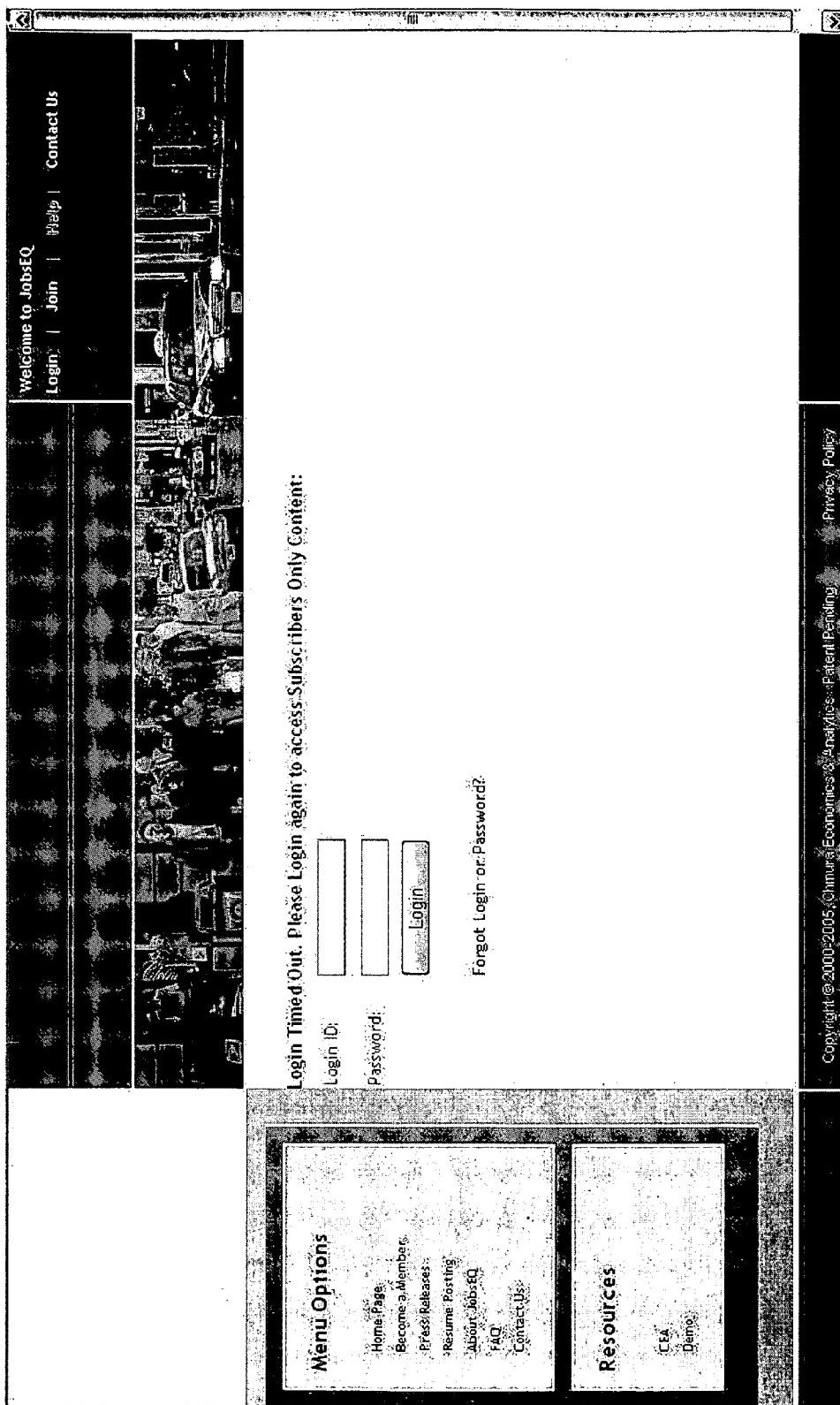


Figure 6

**Menu  
Selection**

**Labor Analytics**

**Knowledge  
Analytics**

**Career  
Analytics**

**Demographic  
Analytics**

**Policy  
Development**

**Figure 7**

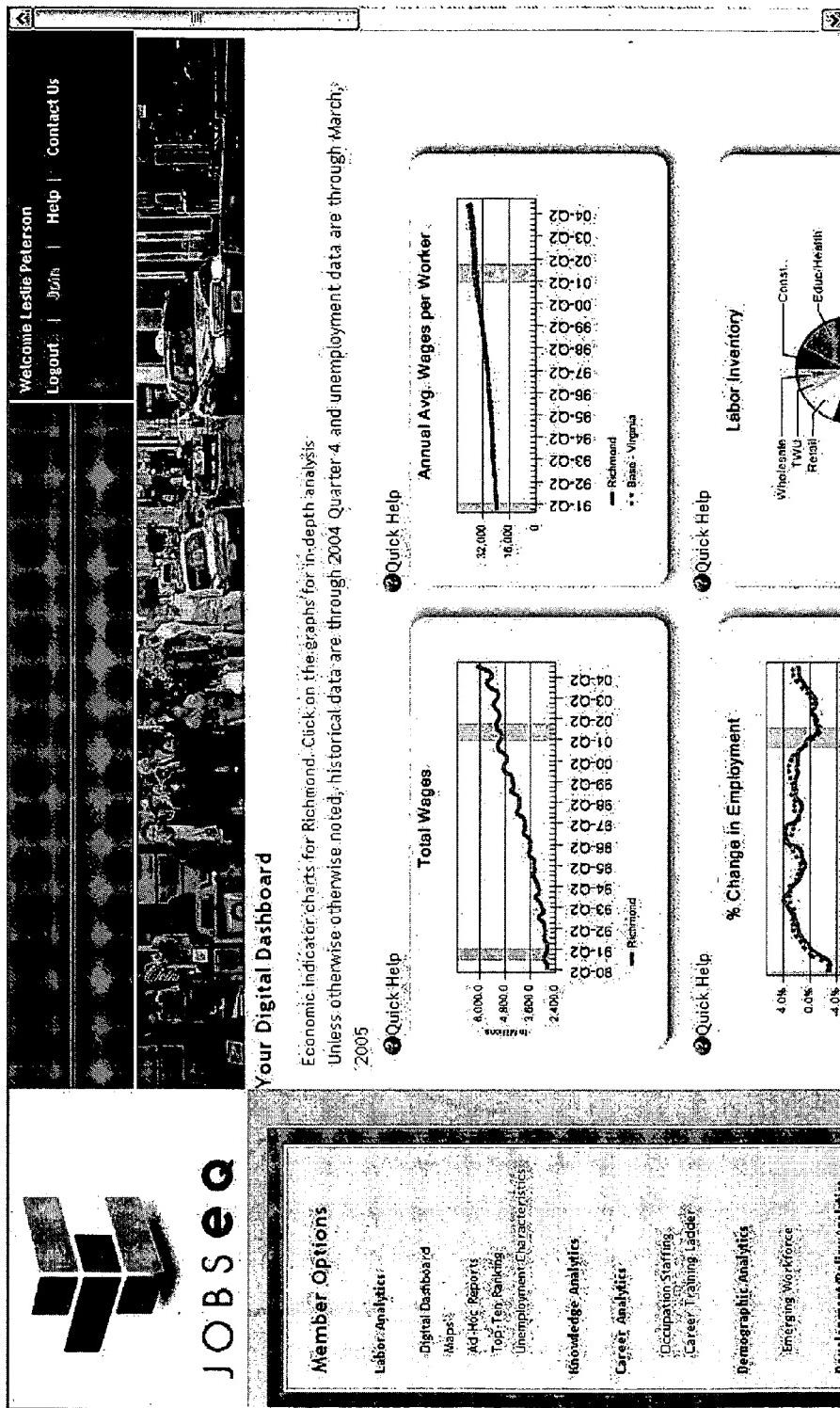


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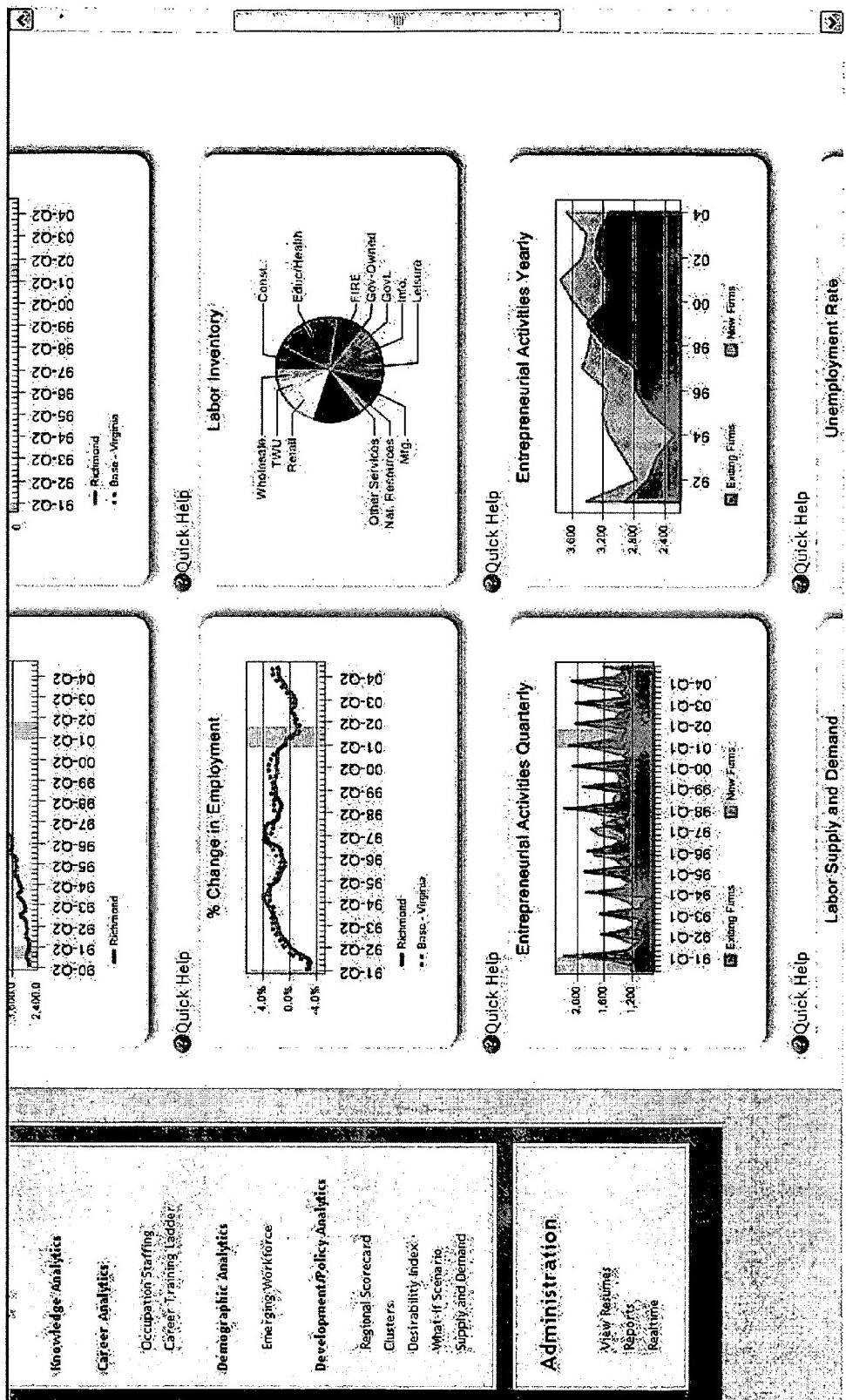


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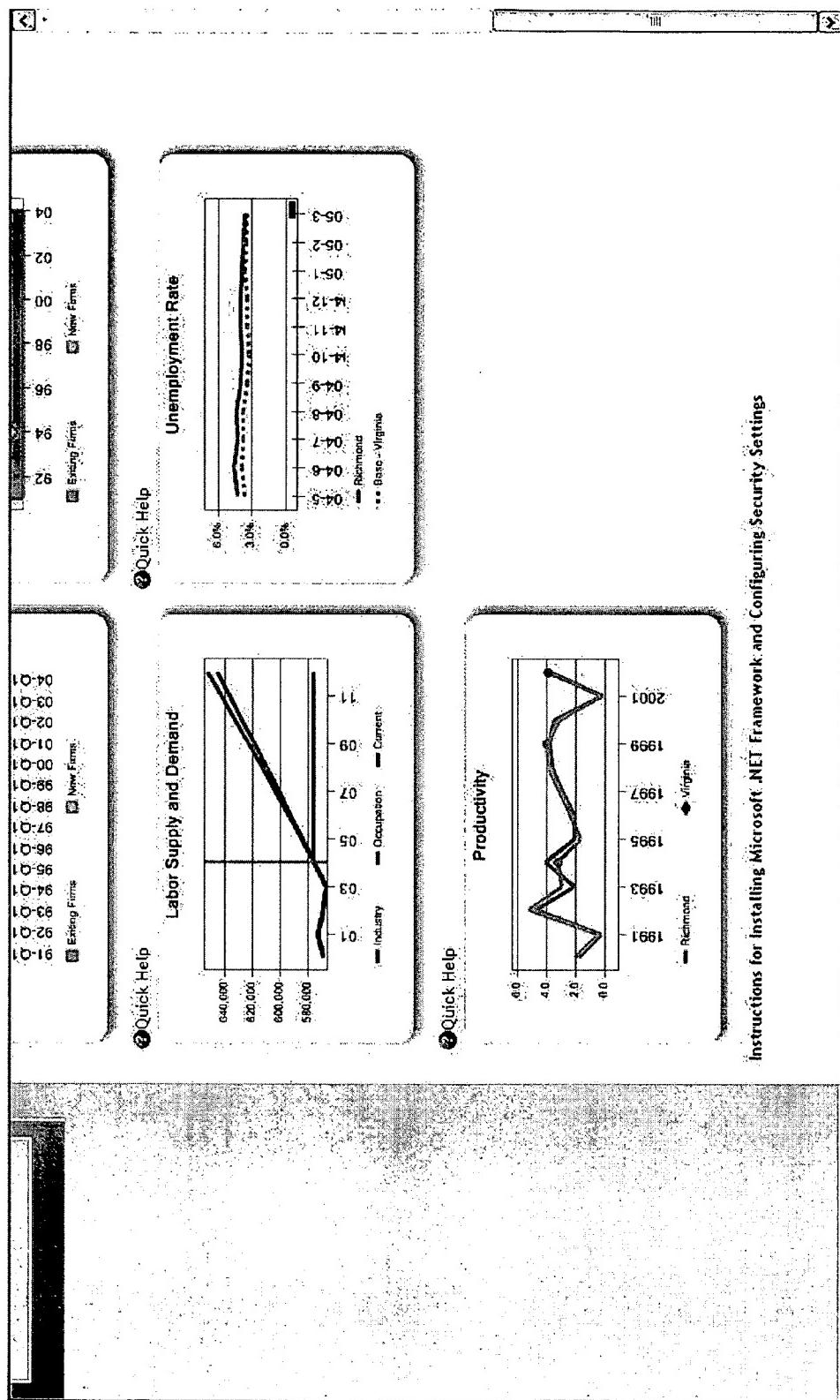


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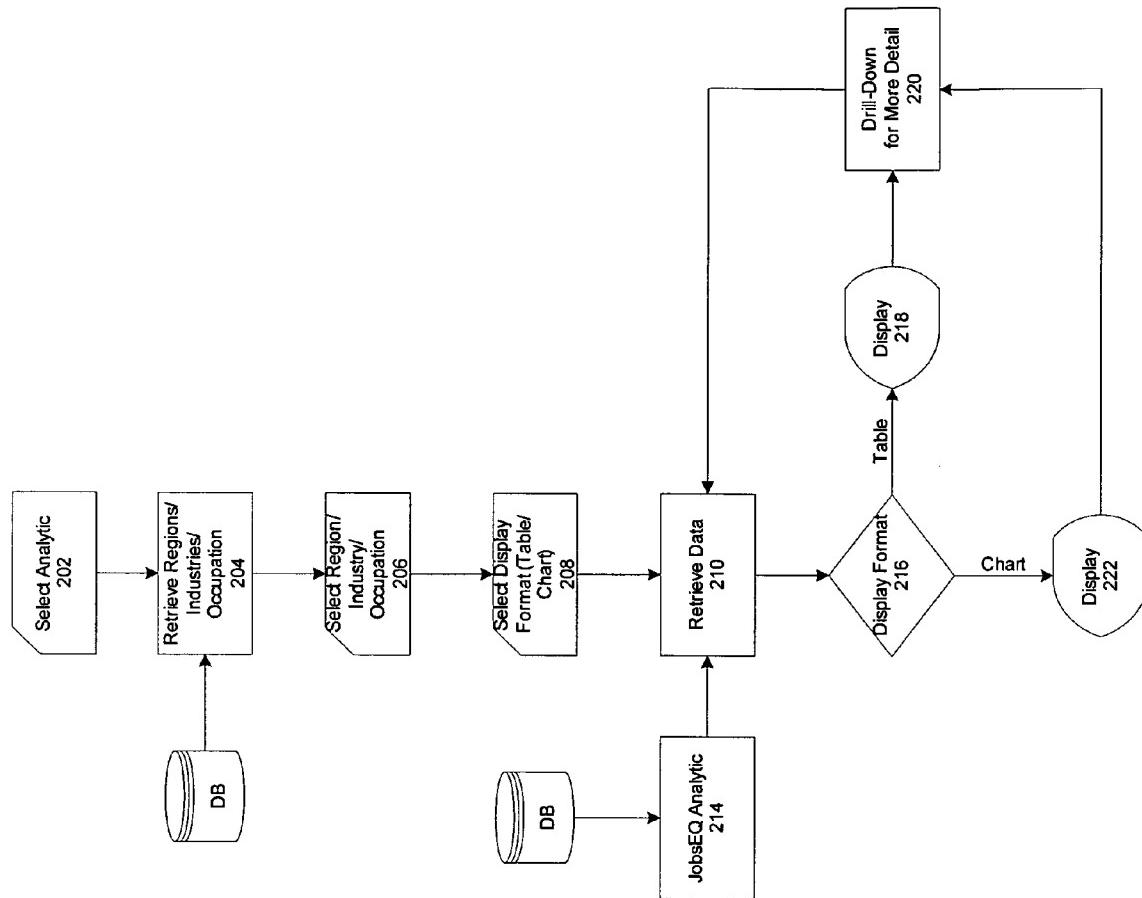


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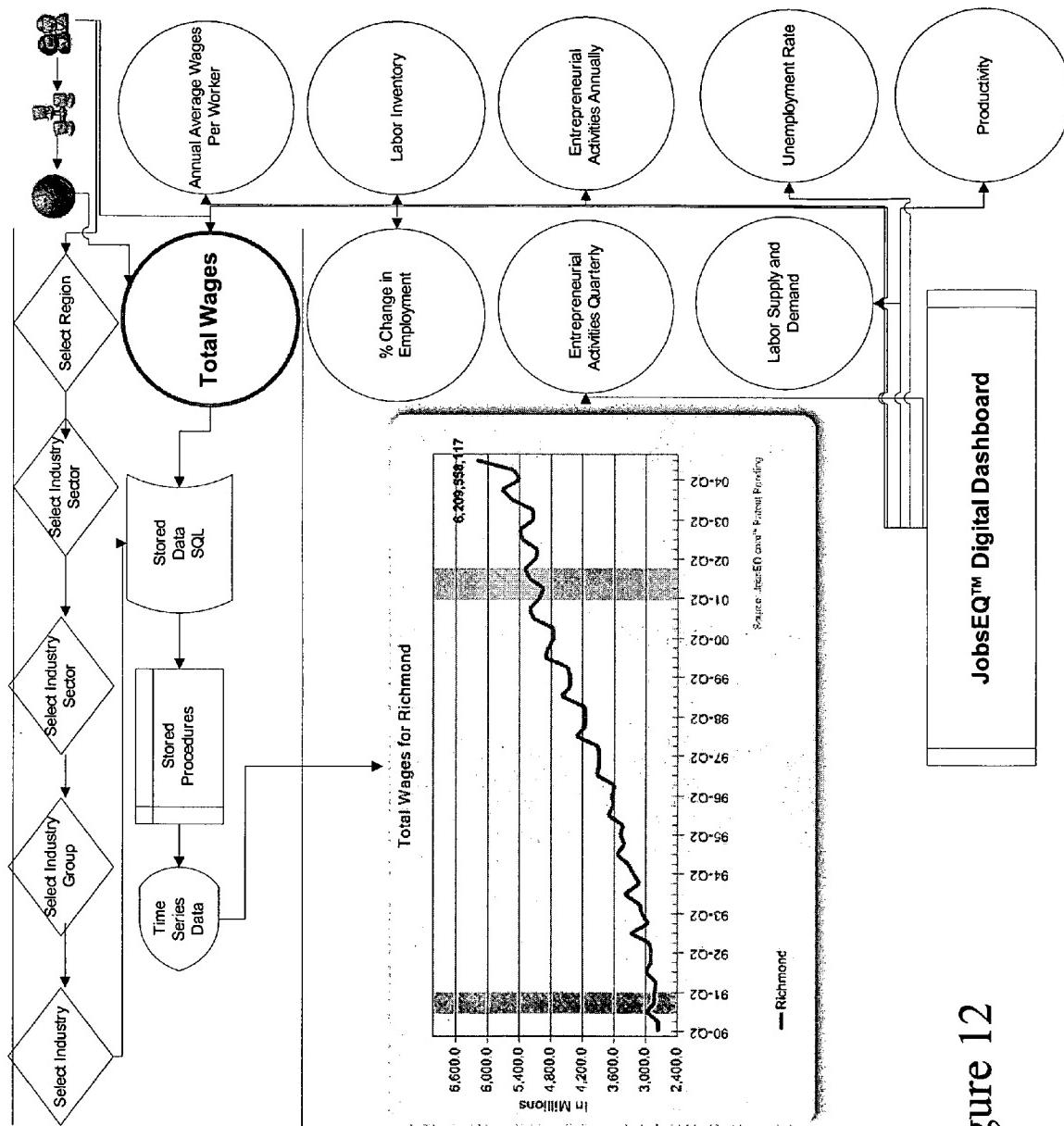


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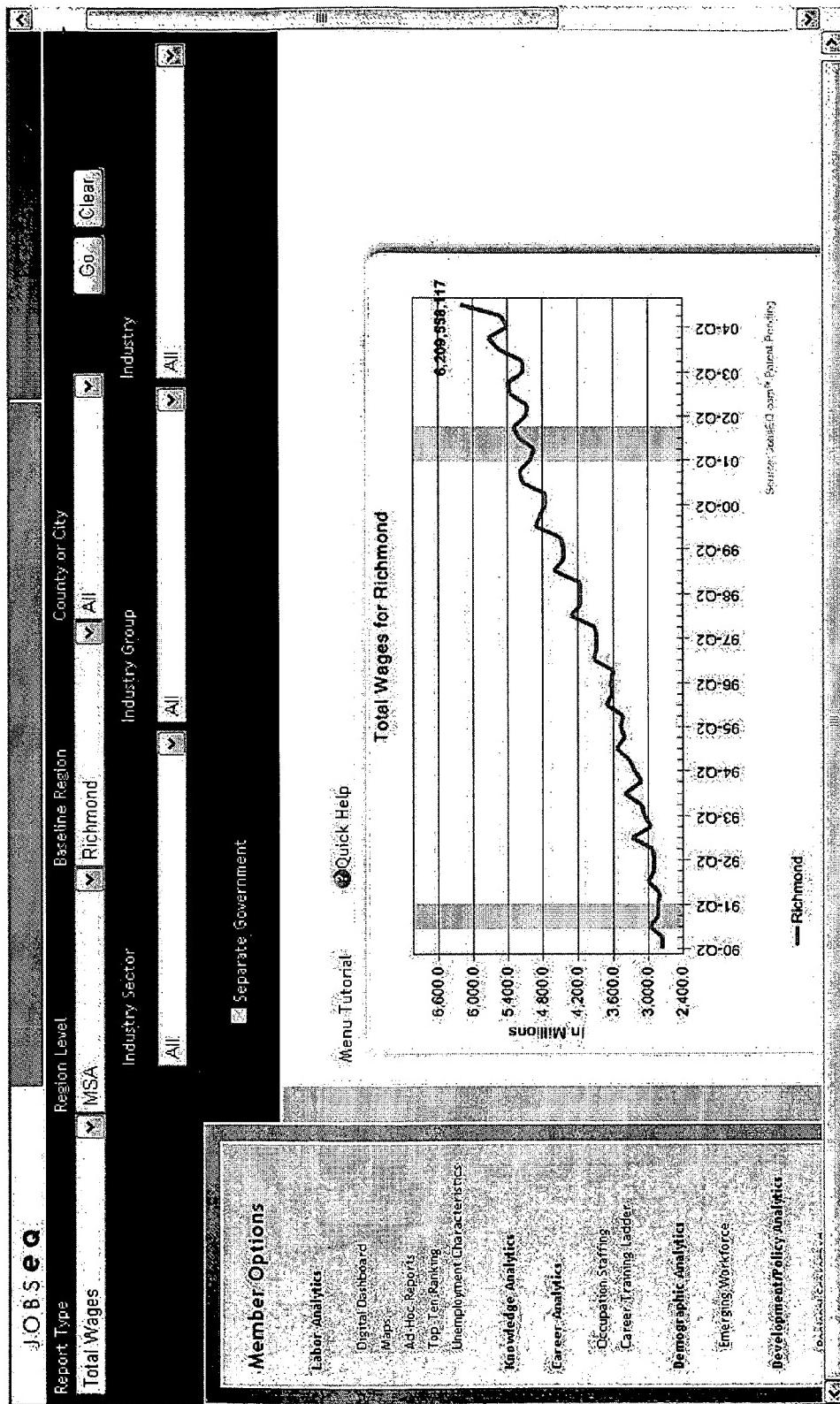


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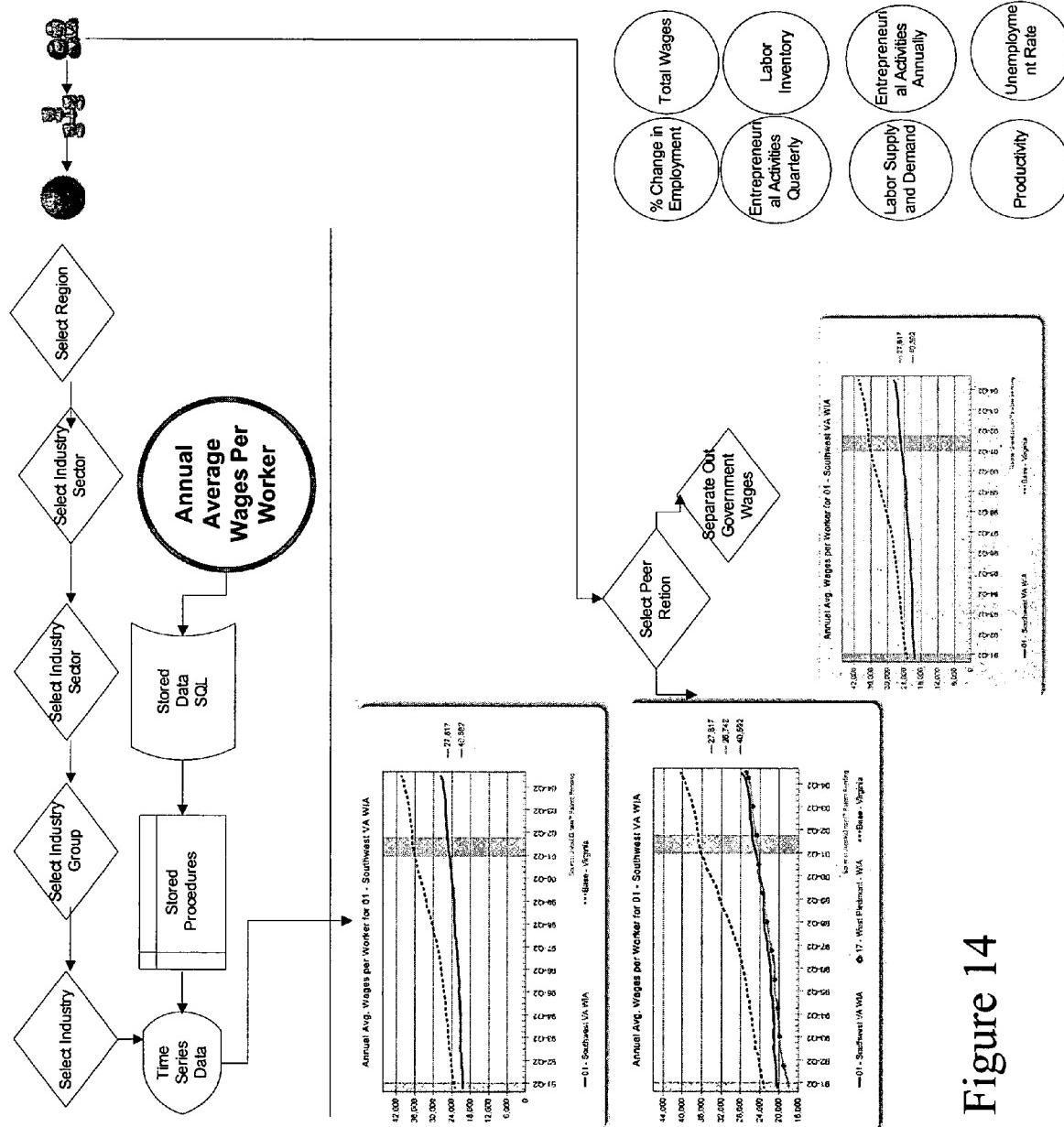


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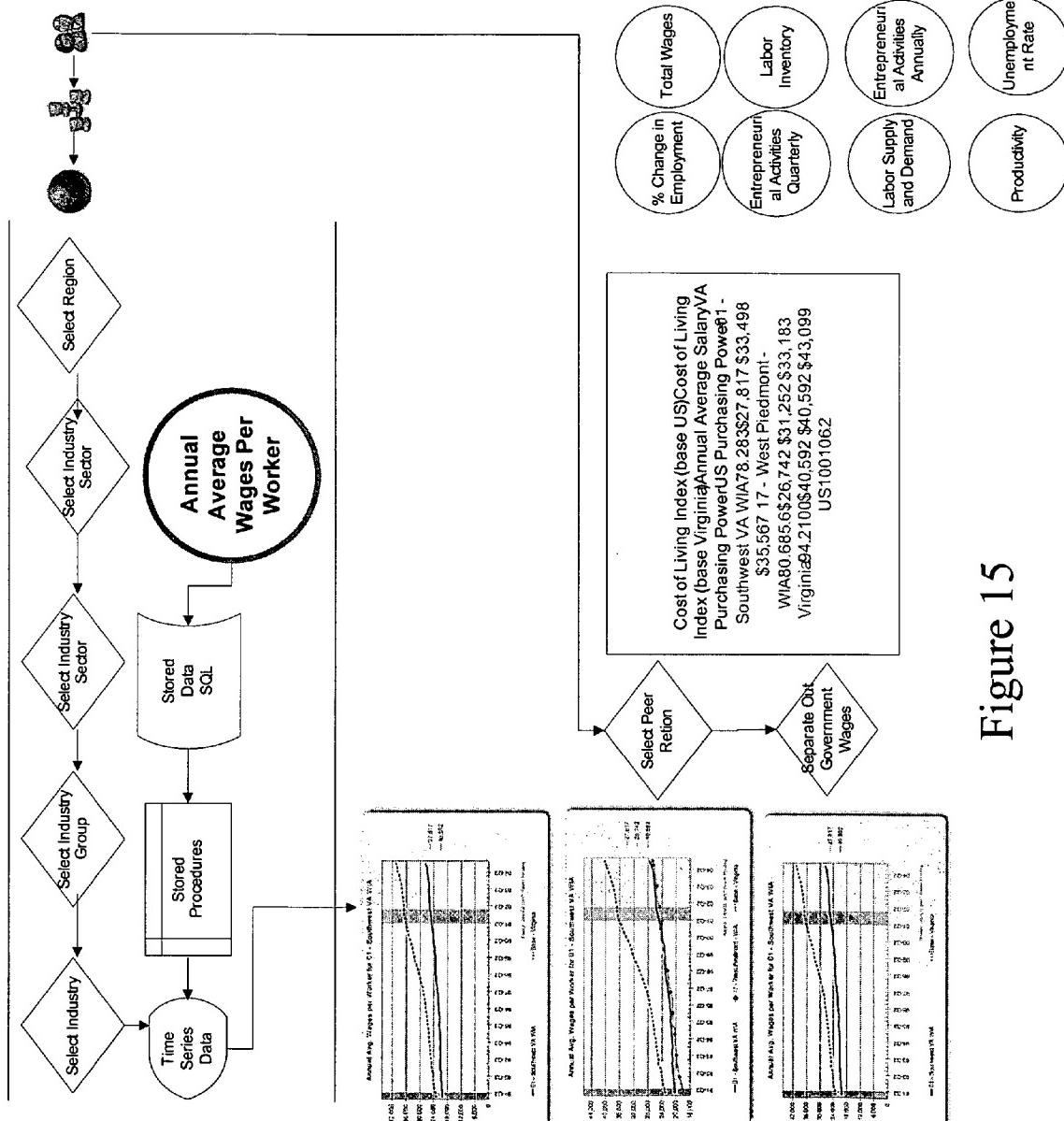


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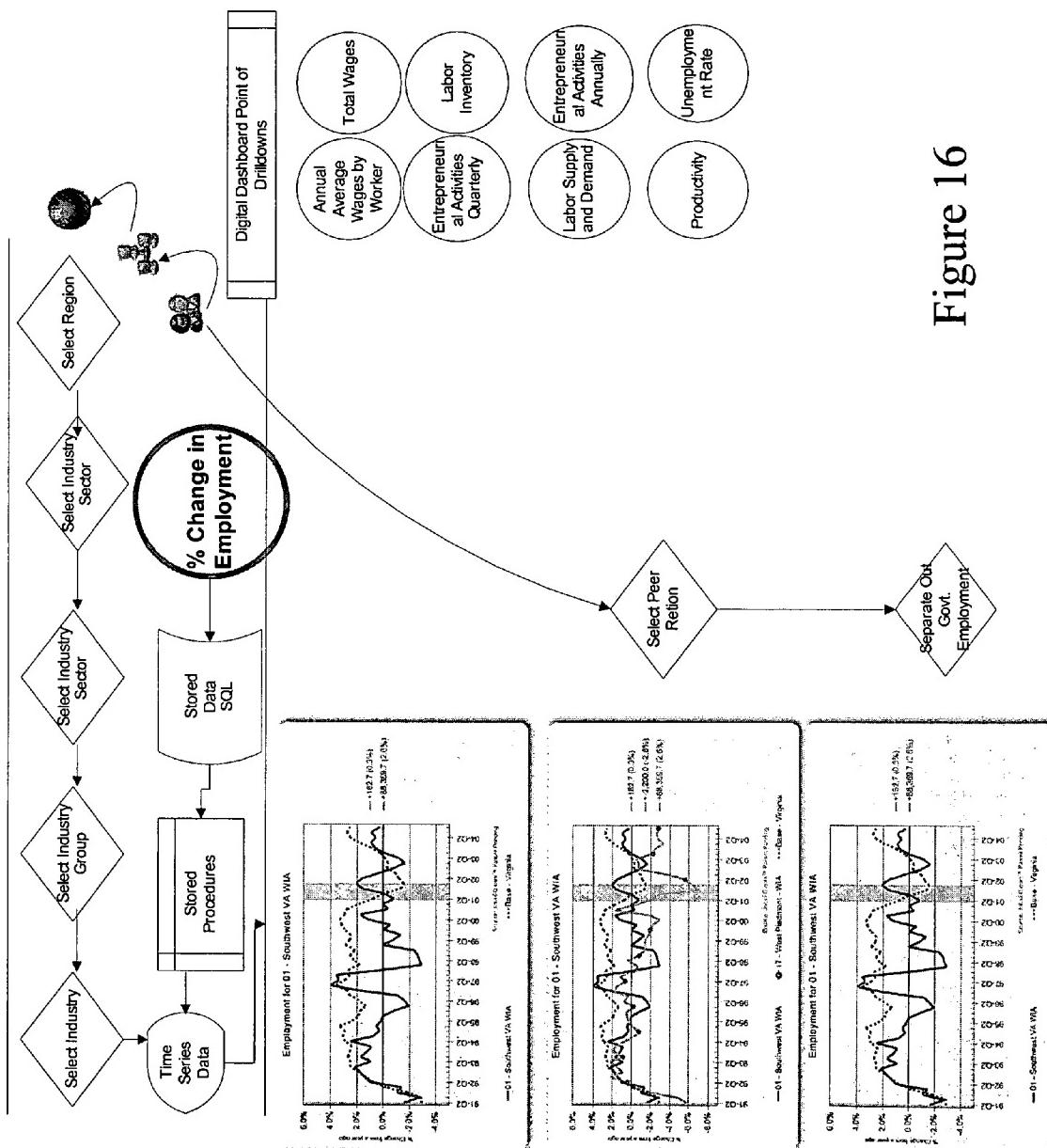


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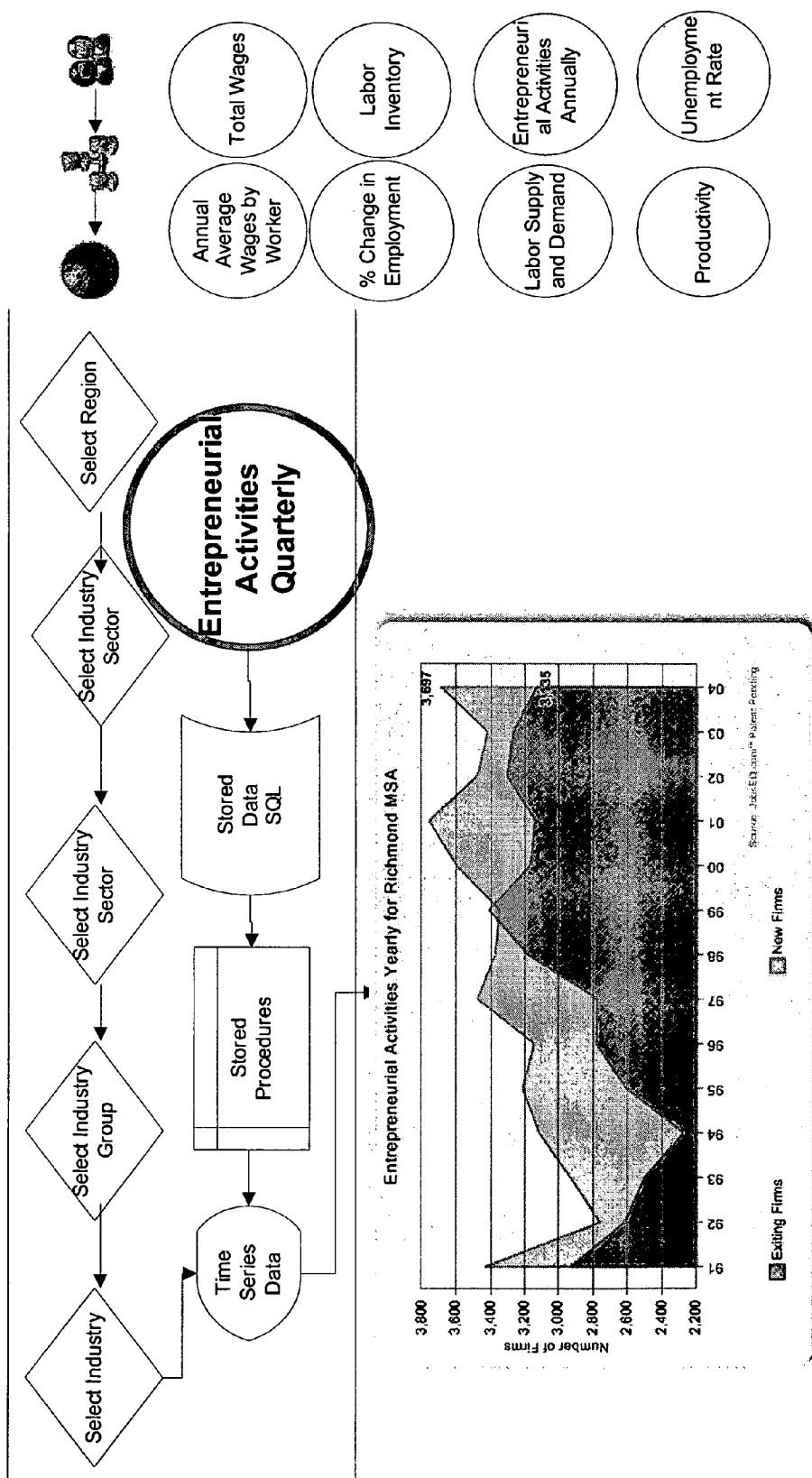


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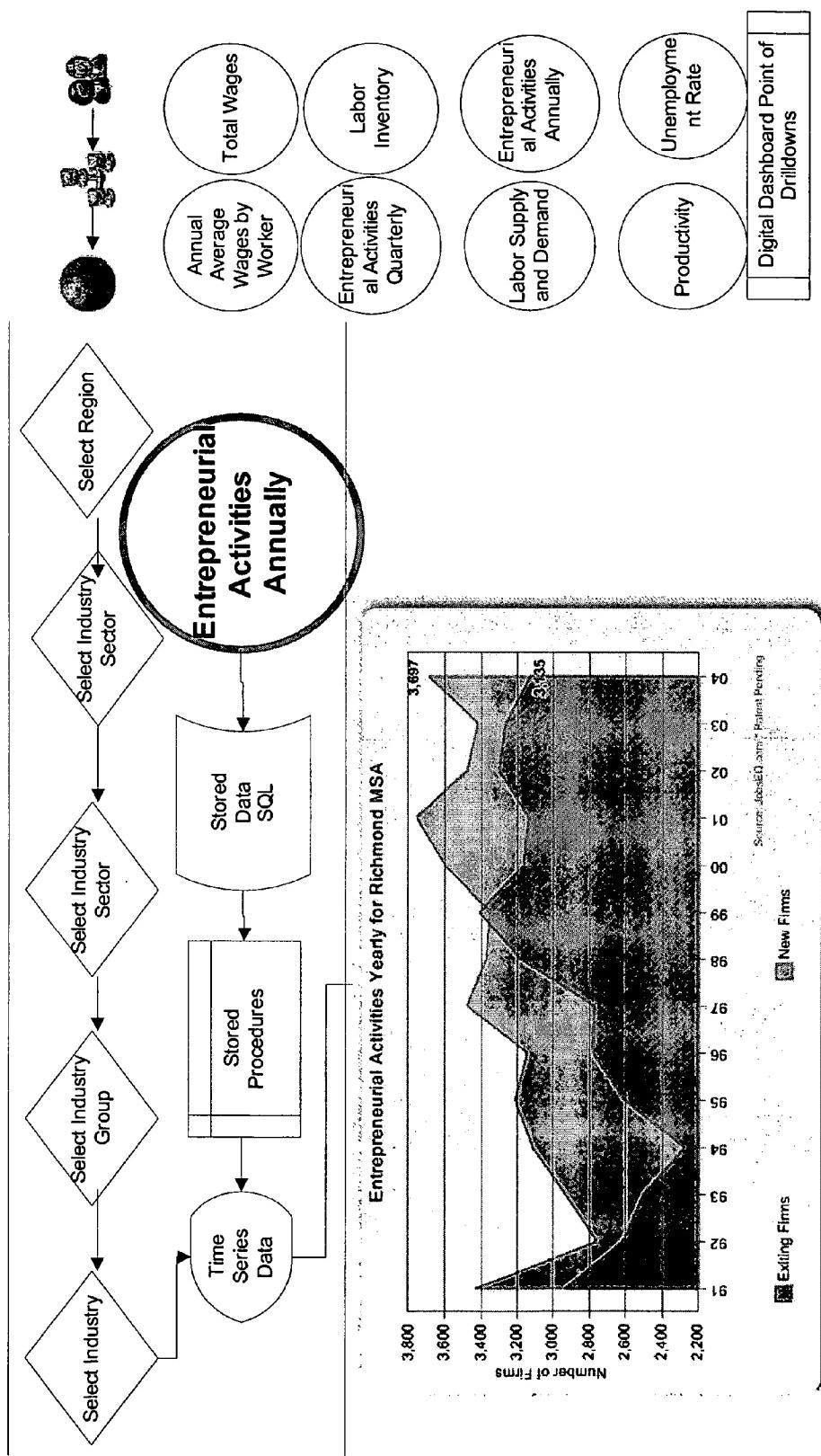


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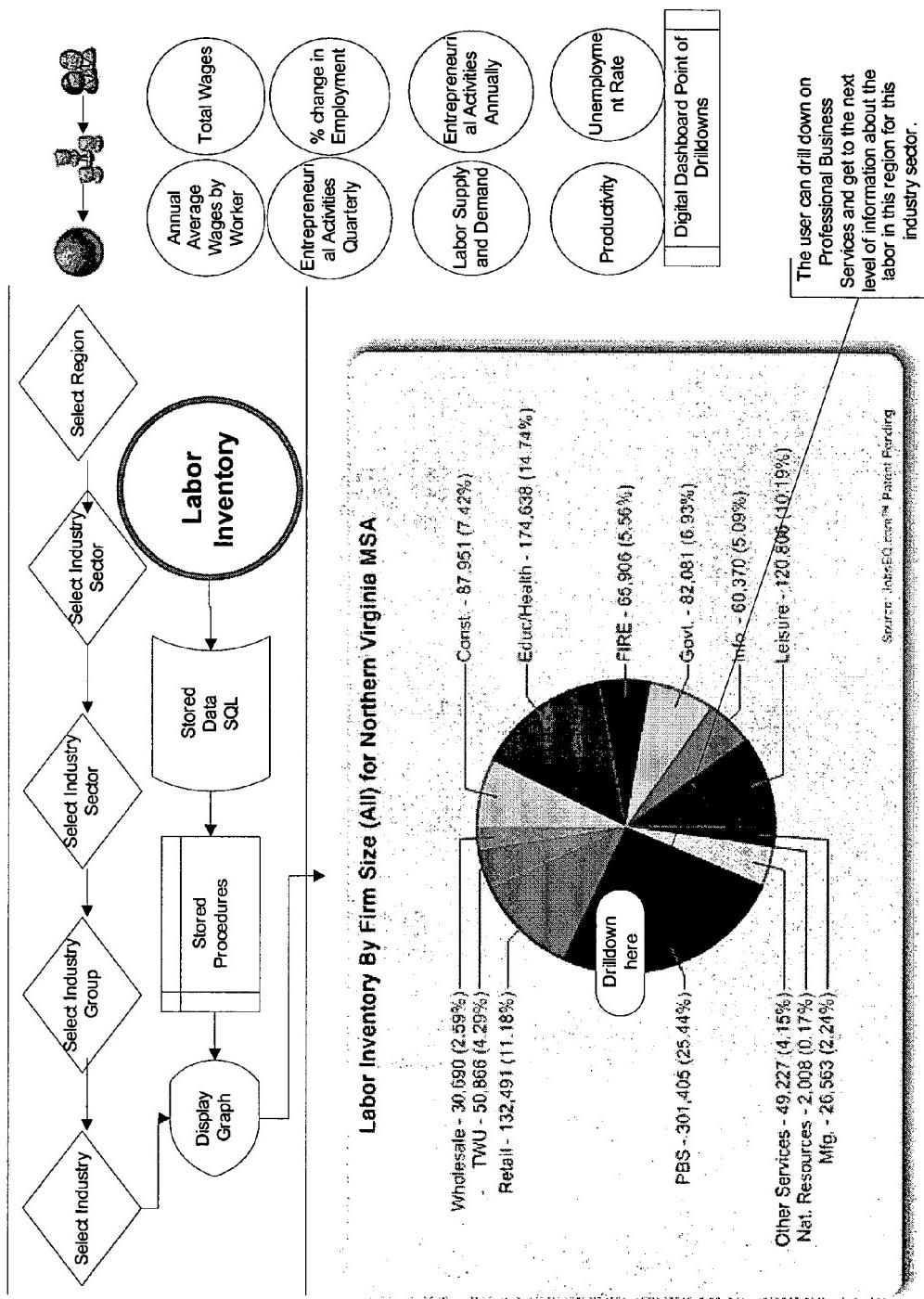


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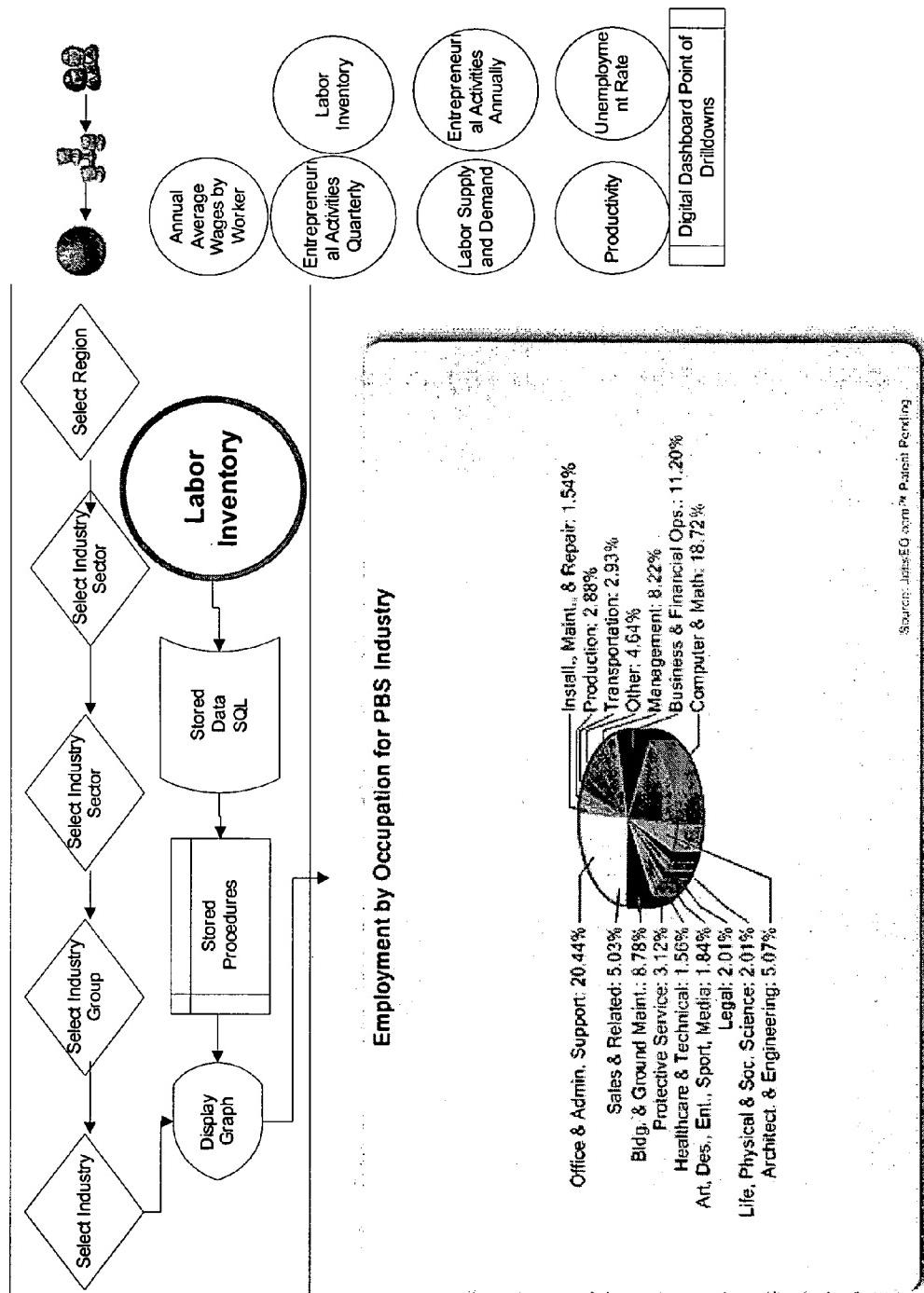


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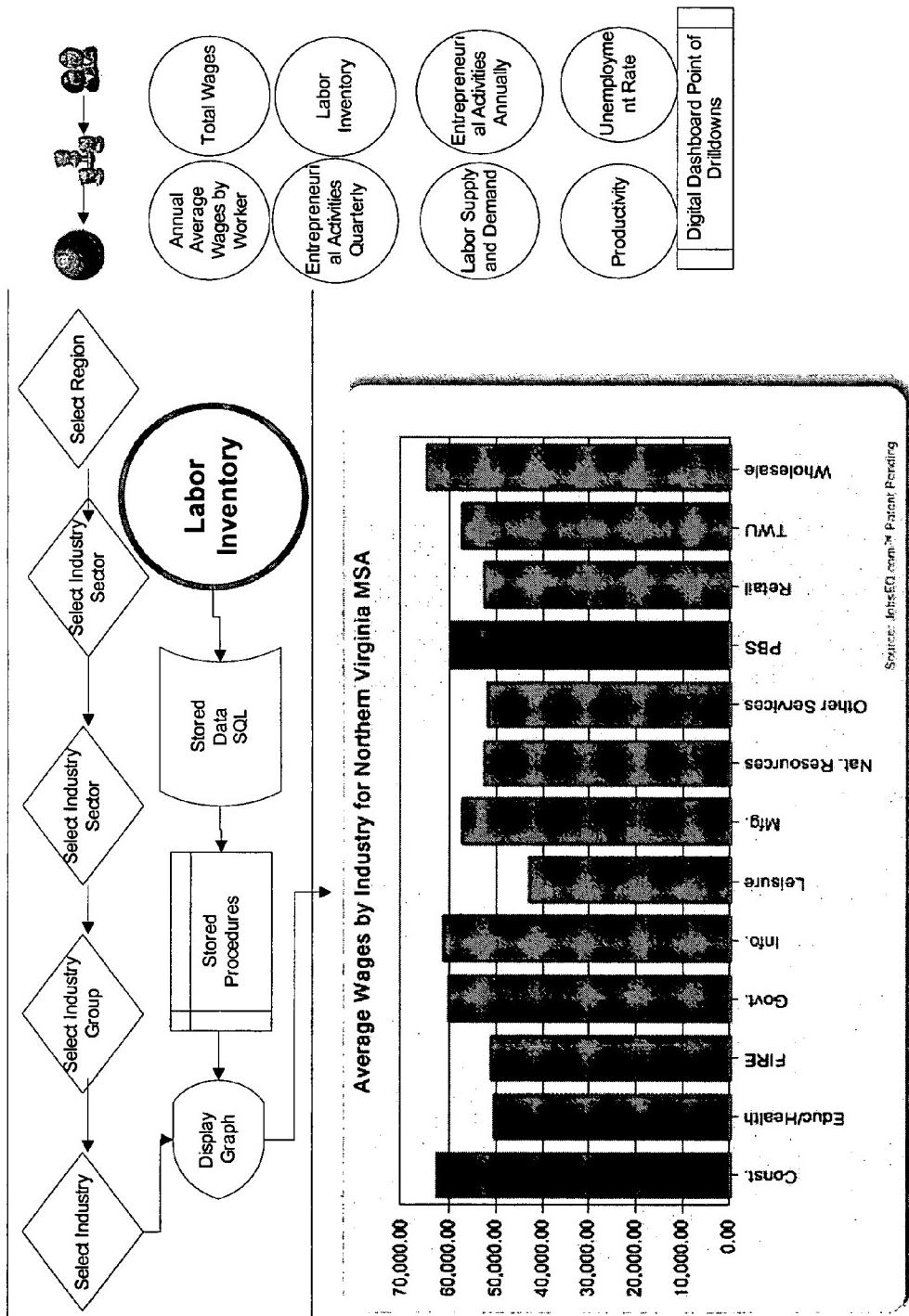


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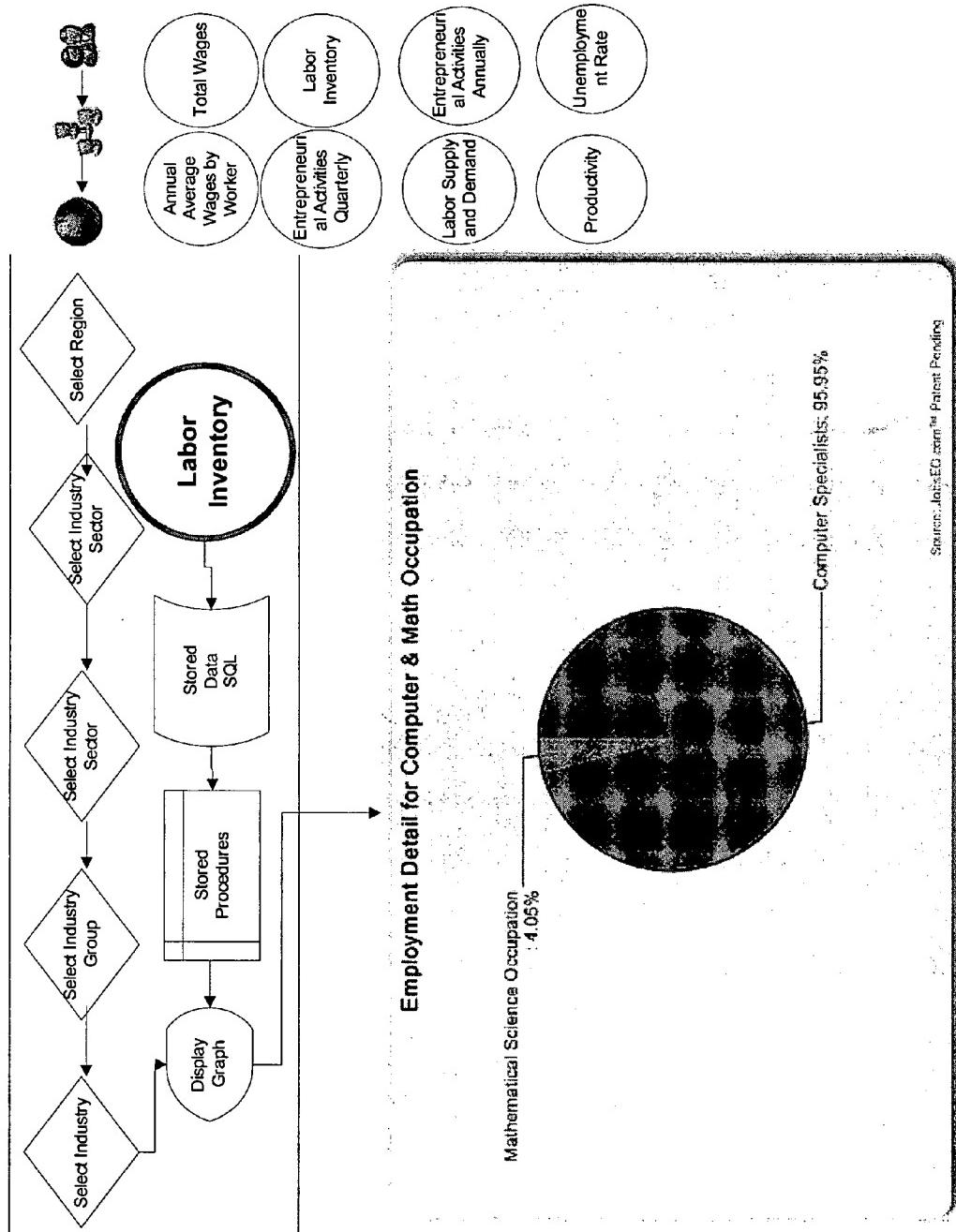
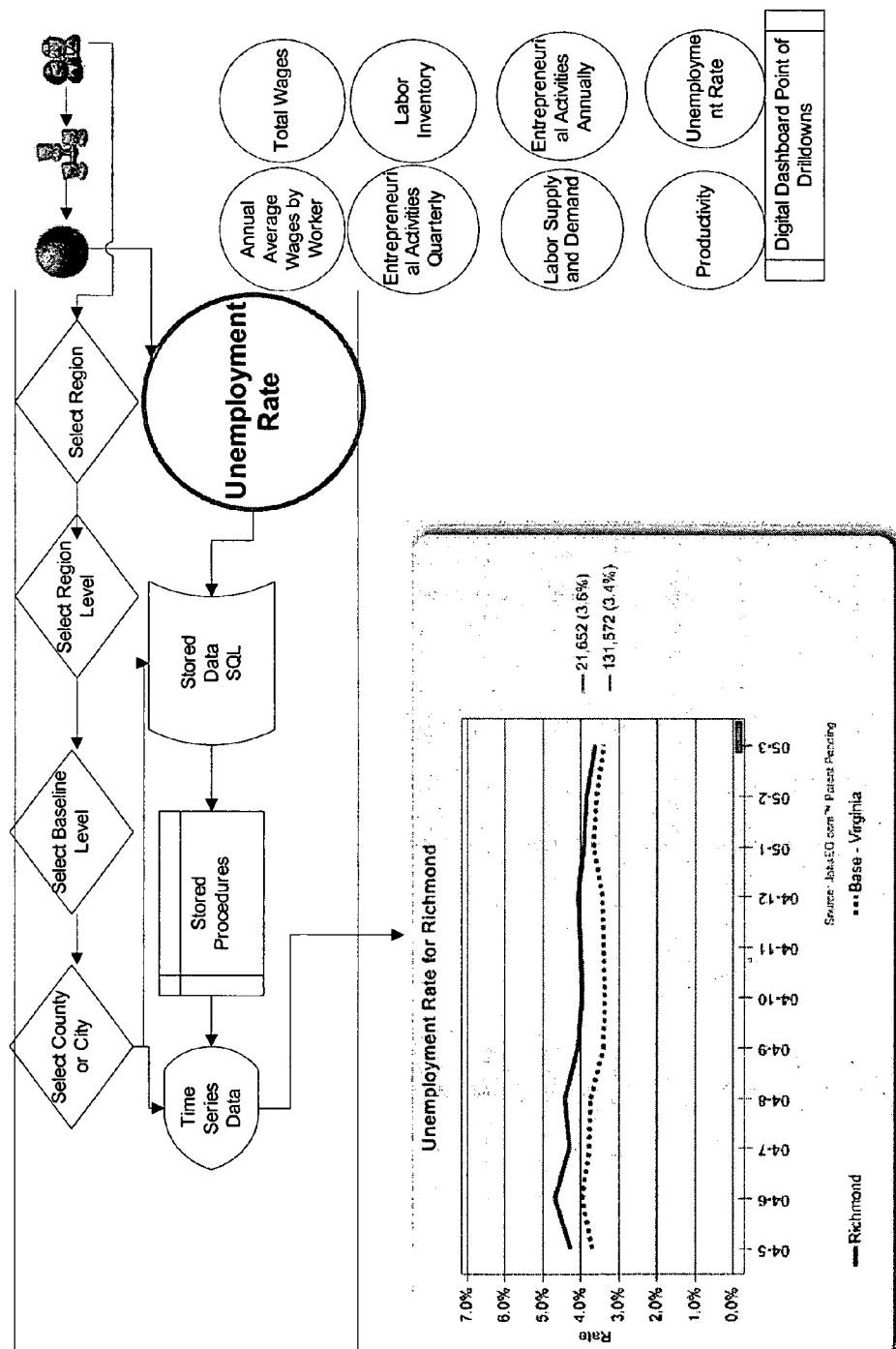


Figure 22



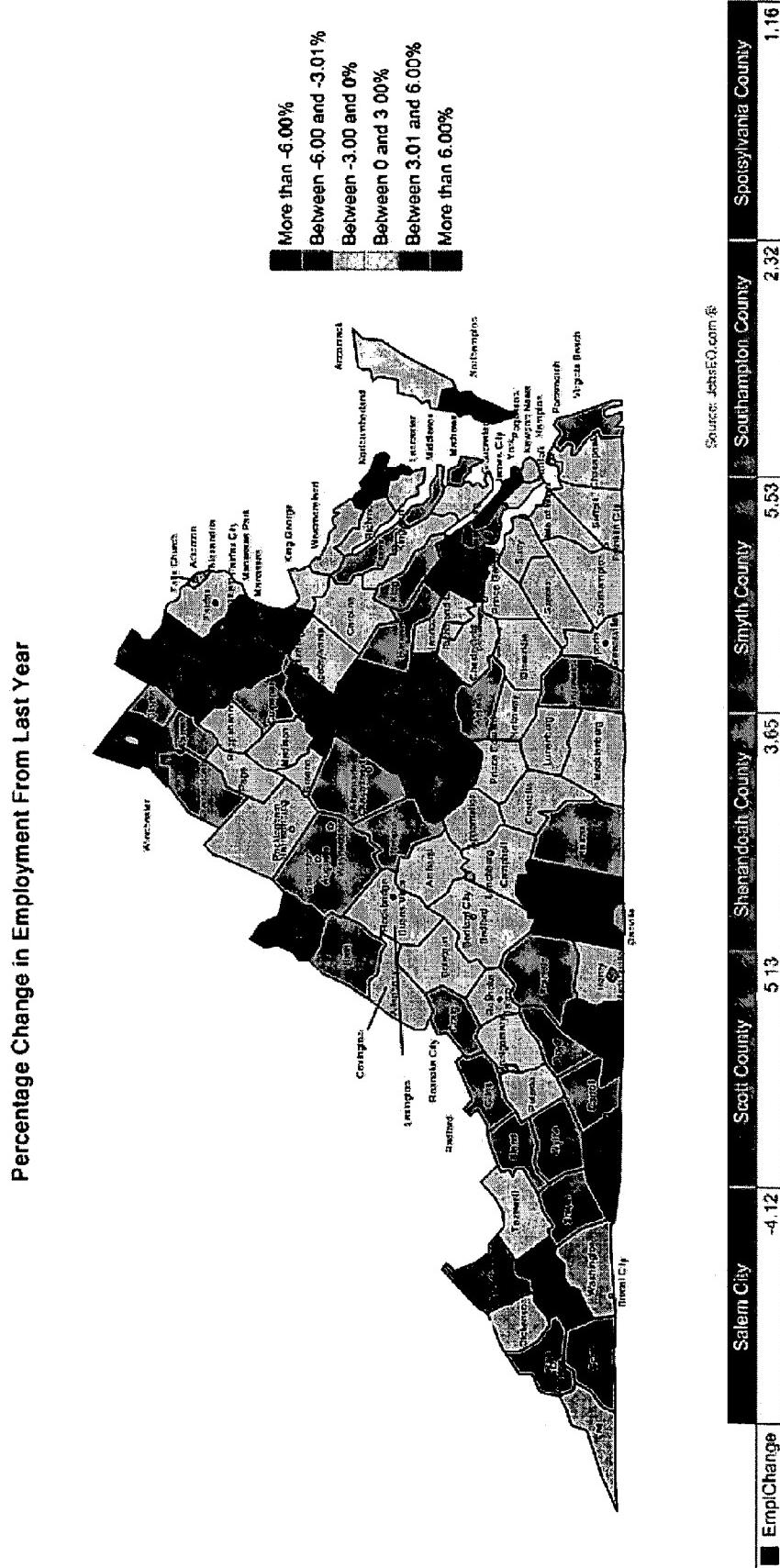


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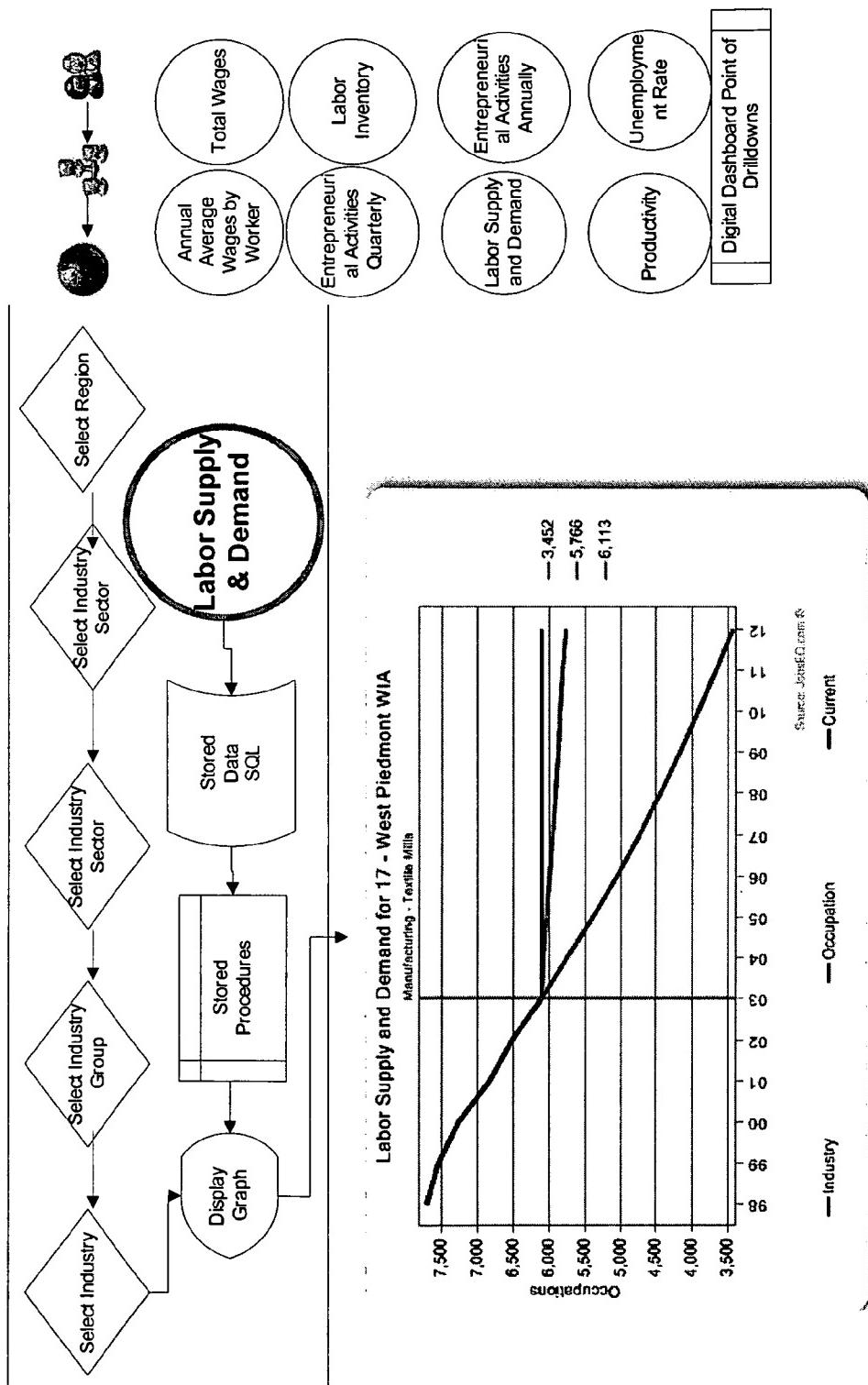


Figure 25

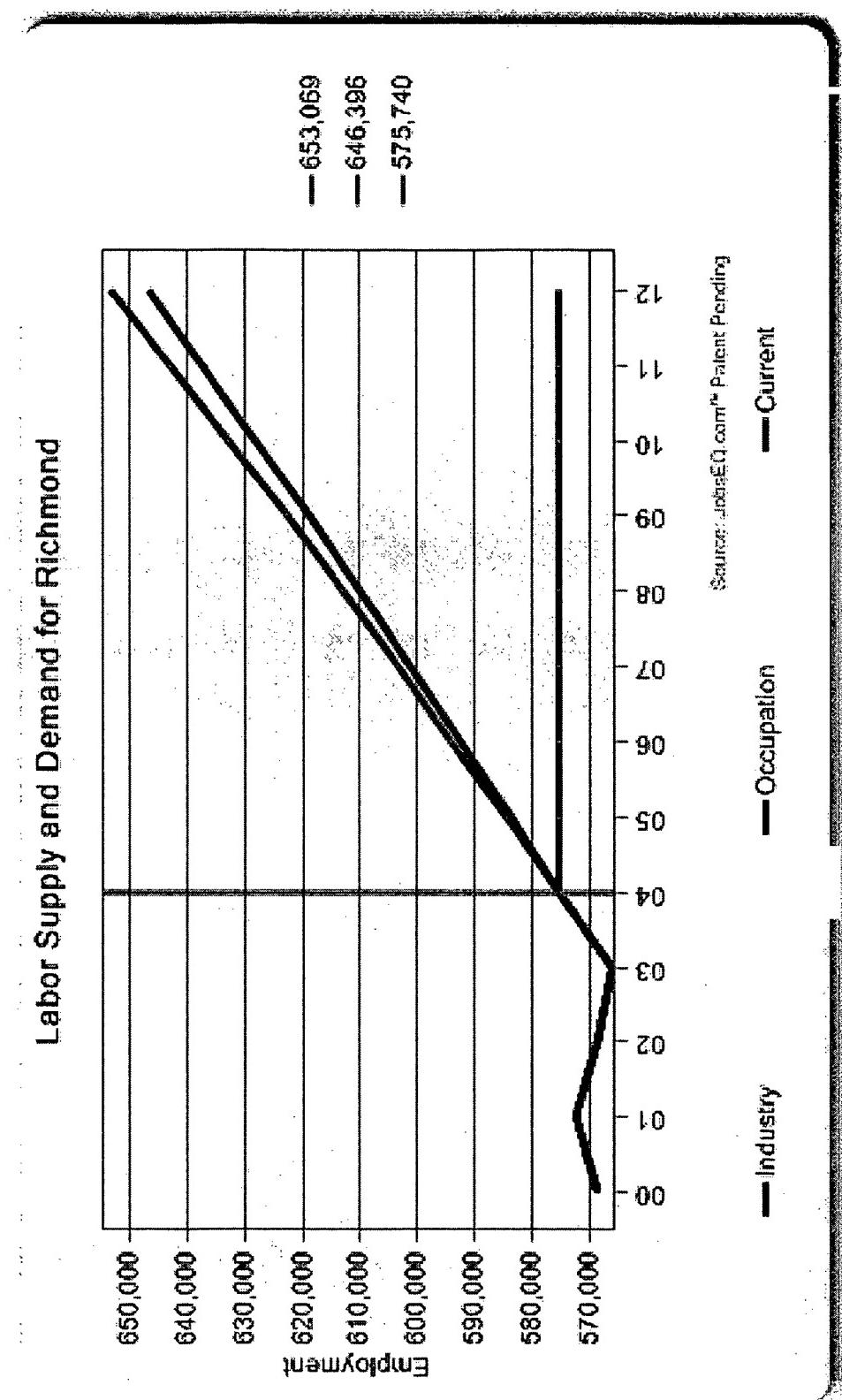


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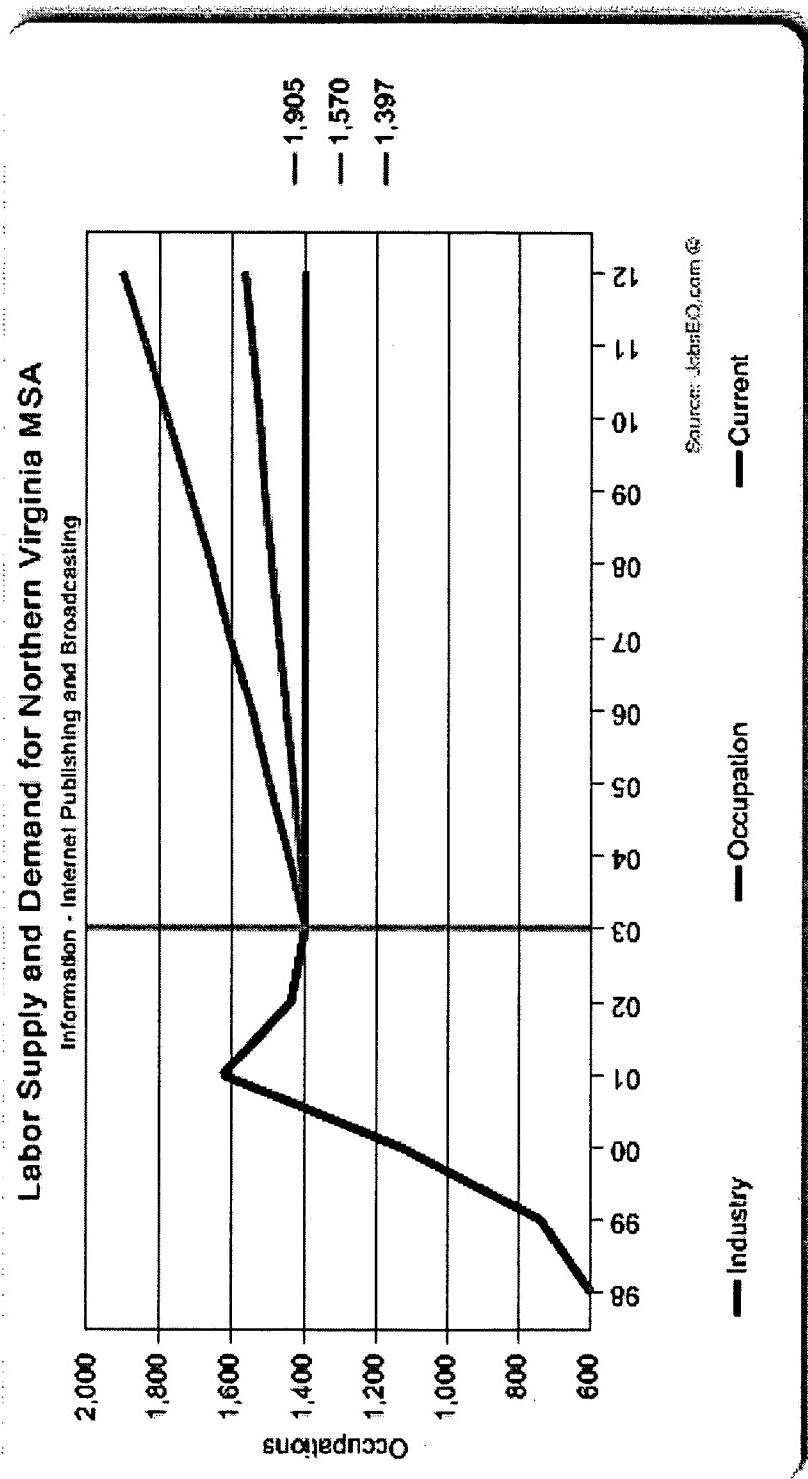


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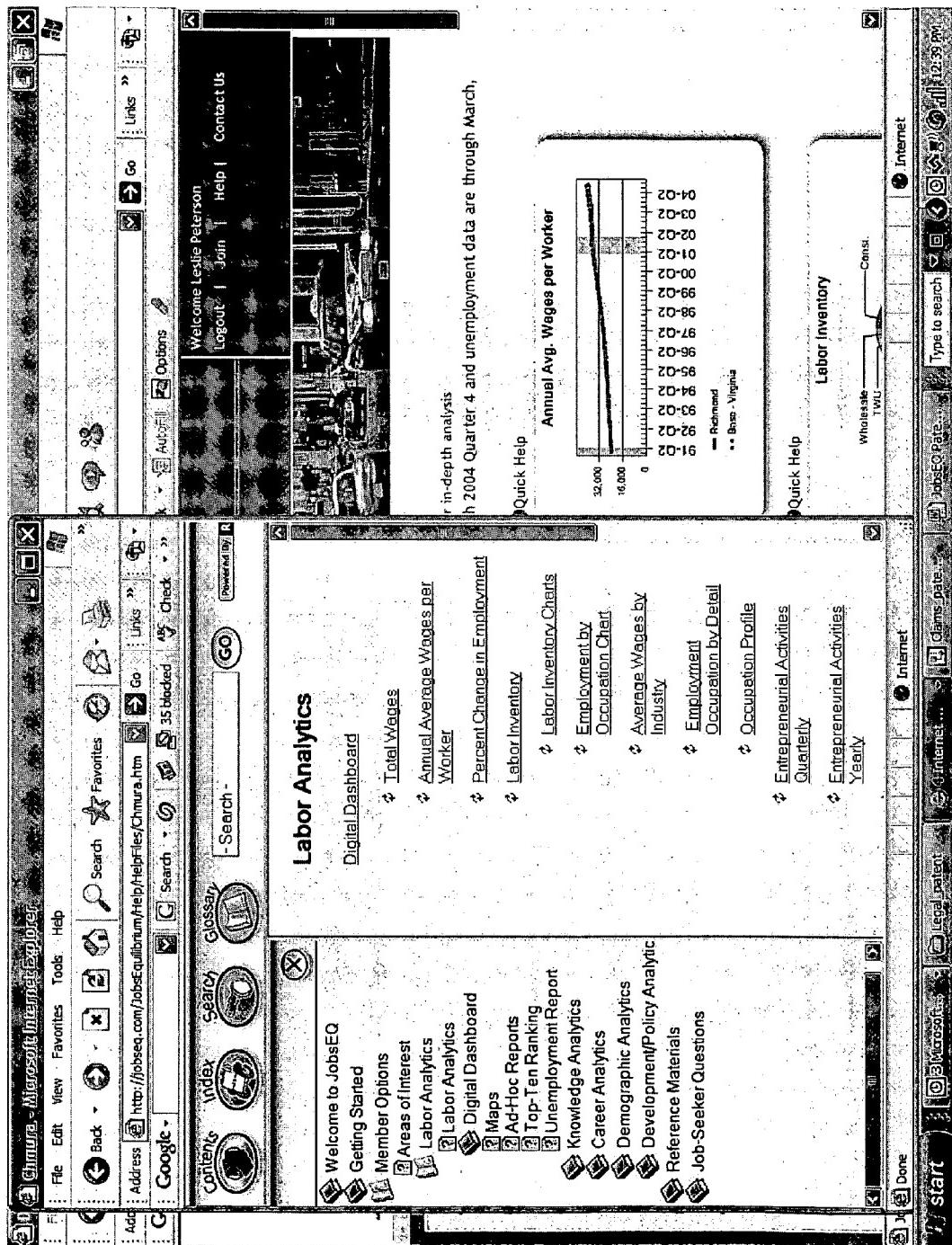


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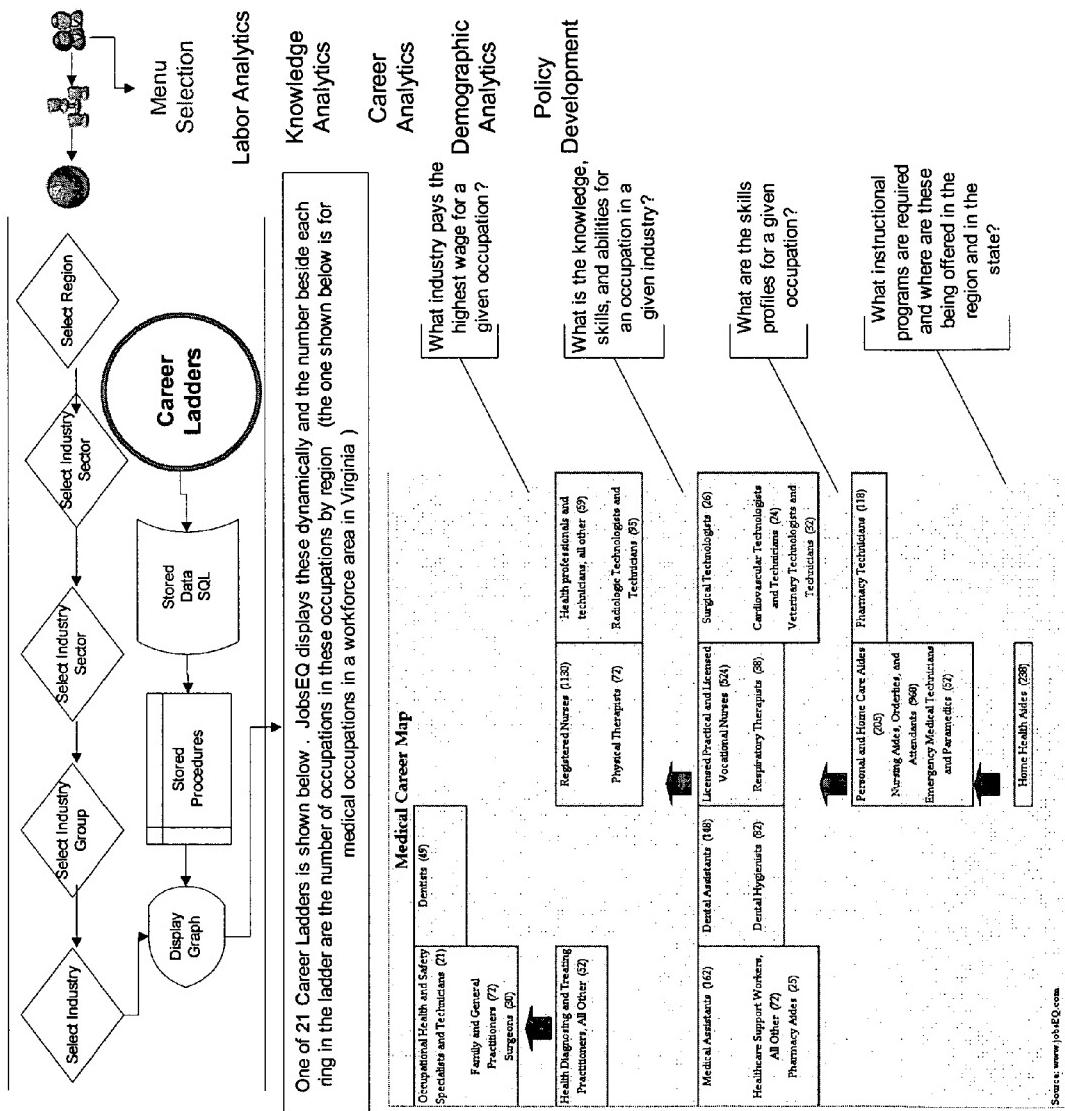


Figure 29

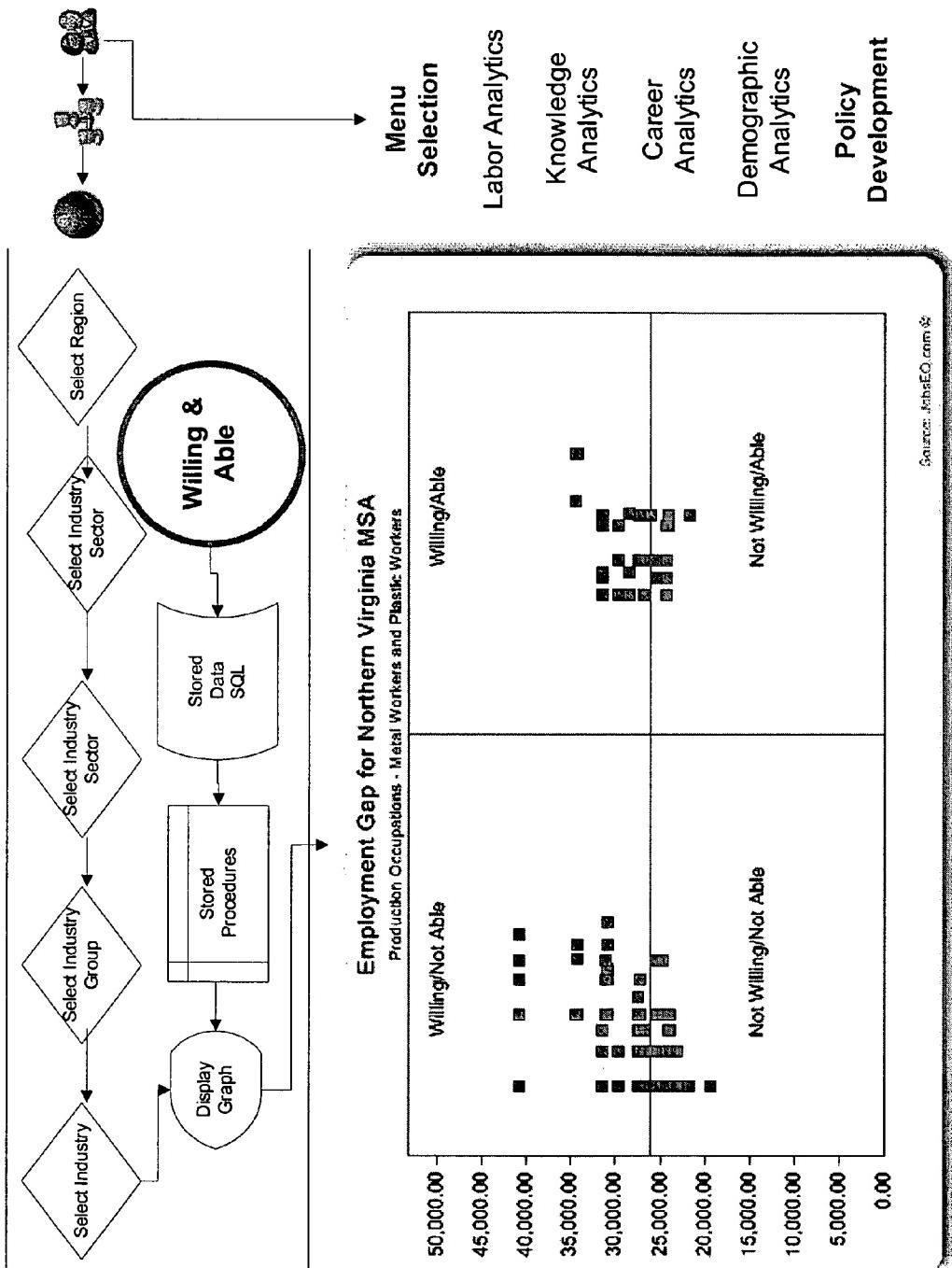
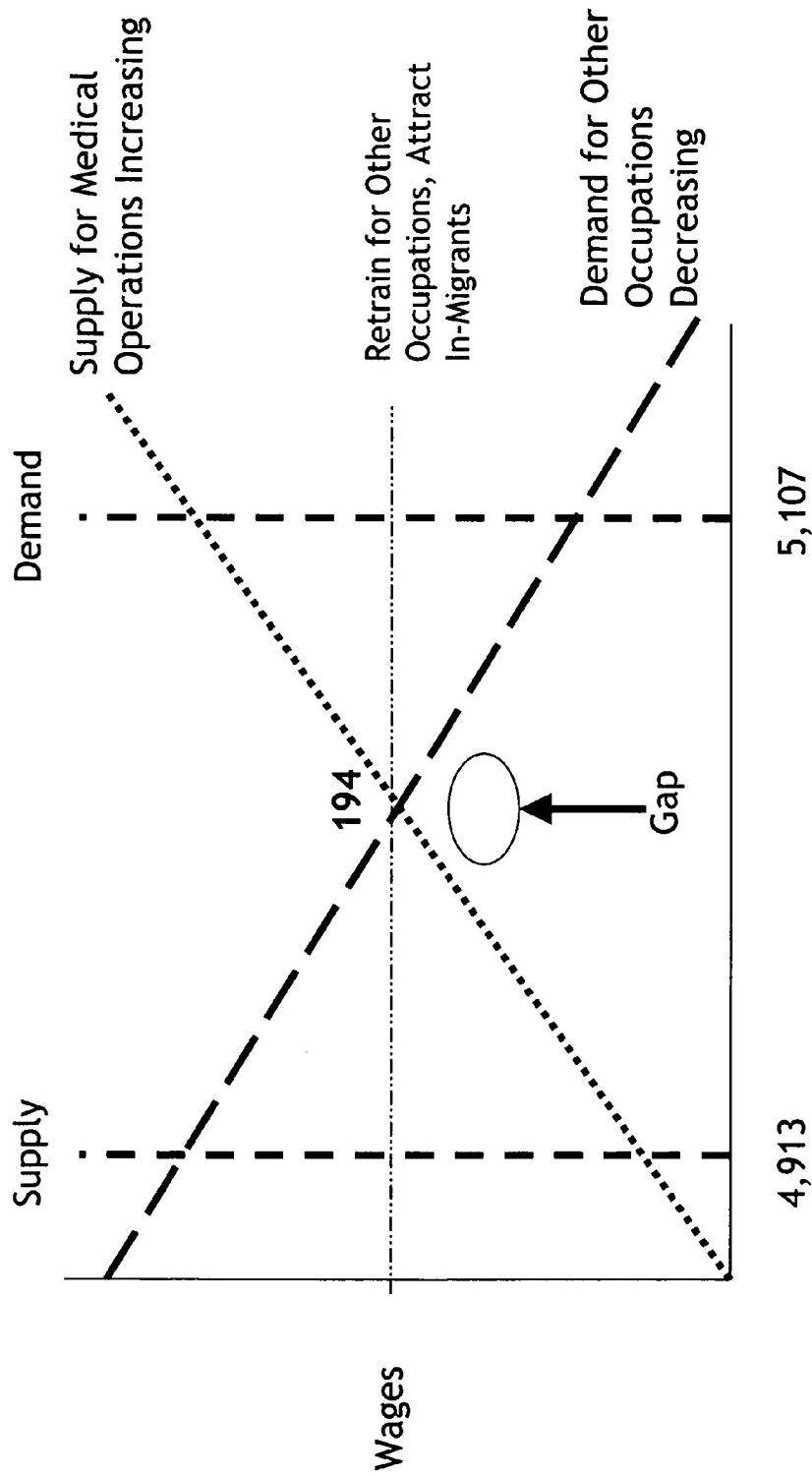


Figure 30



Employment in Medicine/Dentistry, 2007  
Workforce Investment Area 1

Figure 31

**West Piedmont WIA - Occupations with the Largest Forecasted Growth and Decline in WIA 17, 2002-2012.**

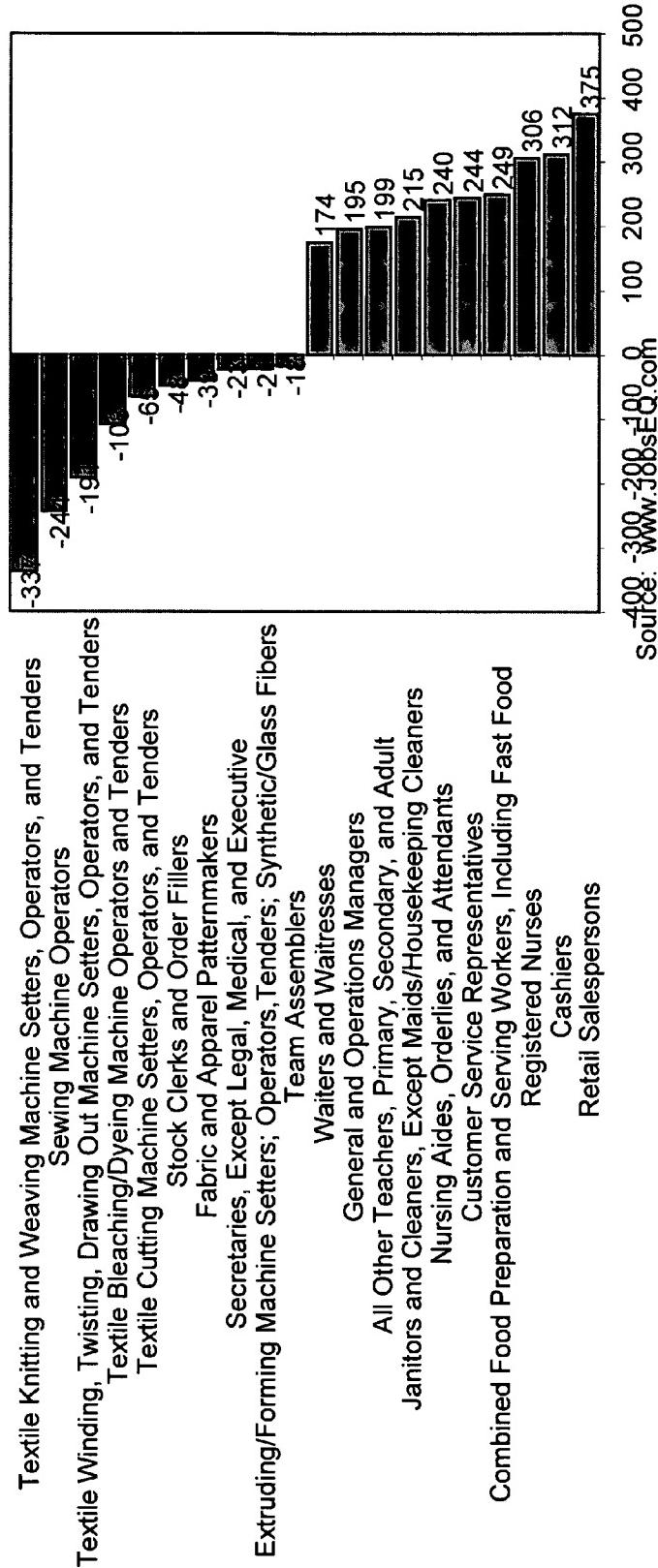


Figure 32

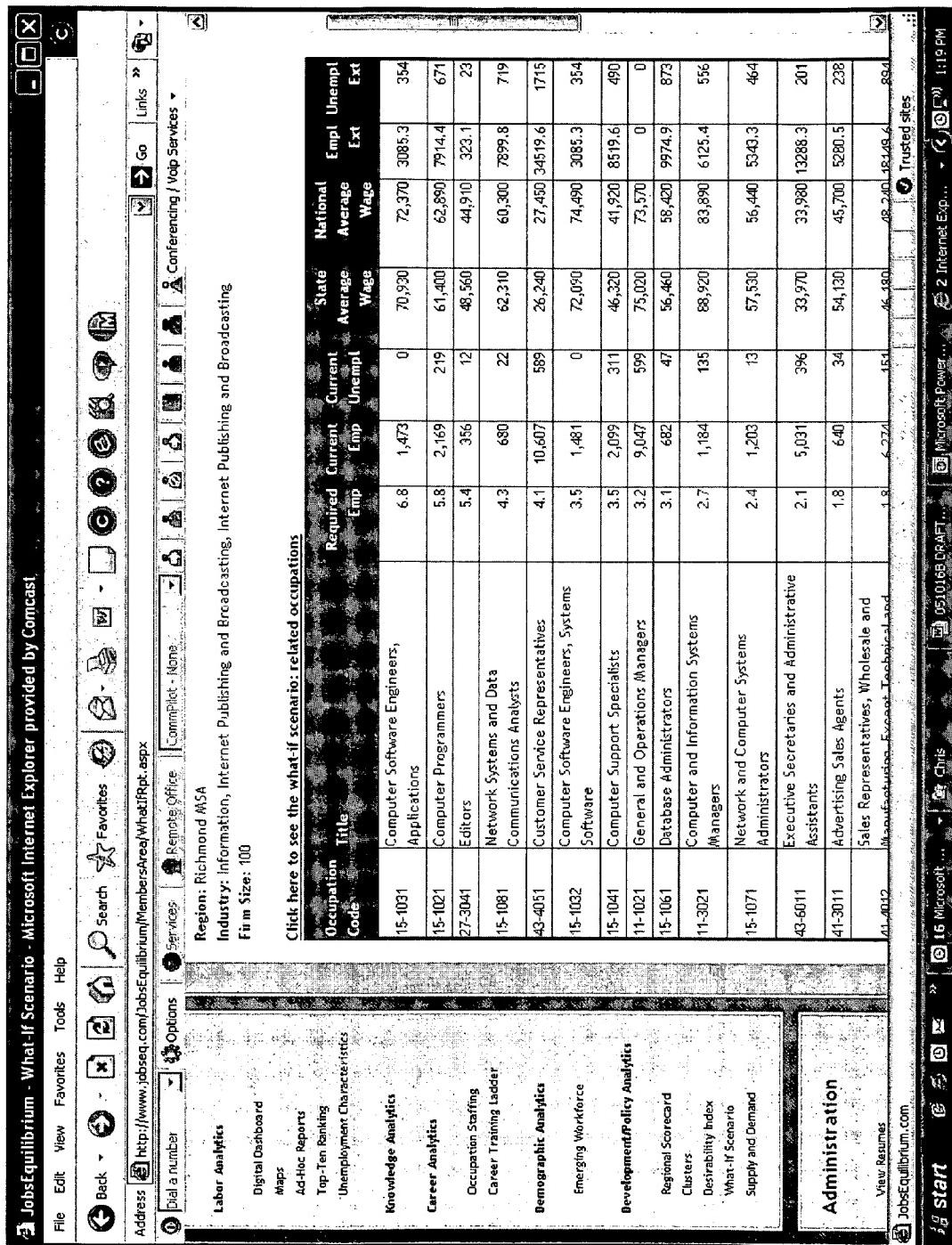


Figure 33

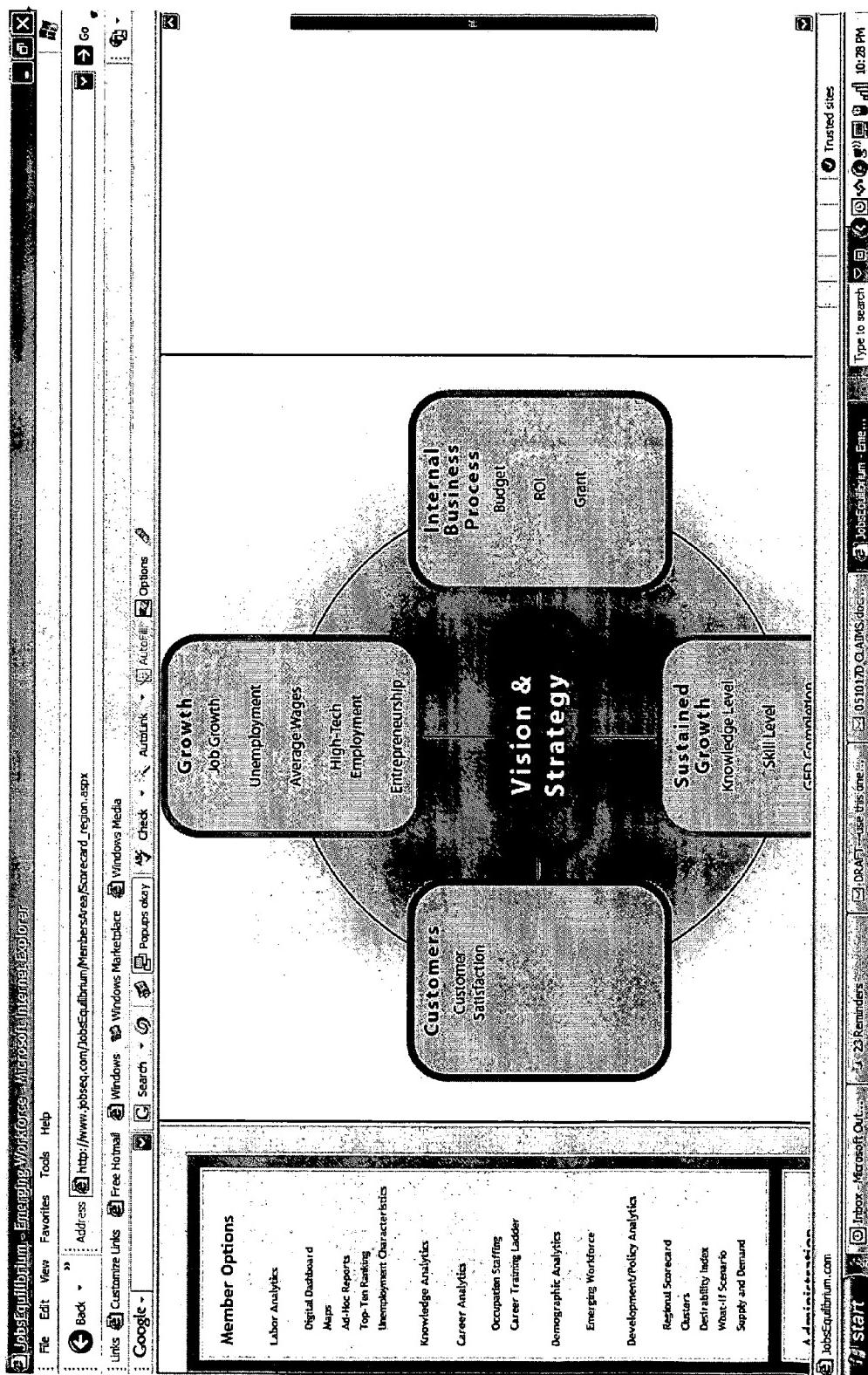


Figure 34

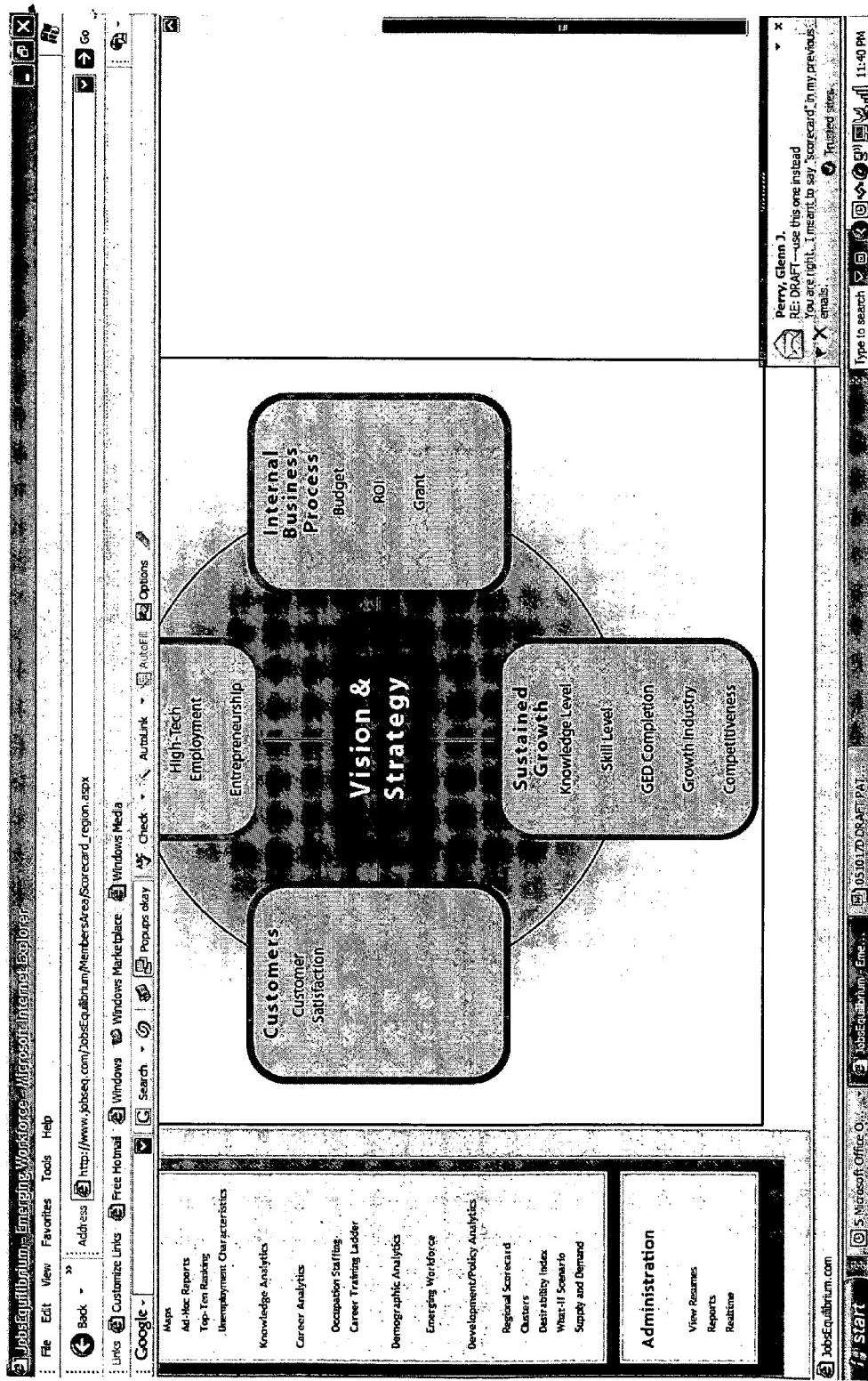


Figure 35

**1**

**SYSTEM AND METHOD FOR MANAGING  
ECONOMIC DEVELOPMENT, WORKFORCE  
DEVELOPMENT AND EDUCATION  
INFORMATION**

**RELATED APPLICATION**

This application claims the benefit of priority for U.S. Provisional Application 60/619,861 entitled SYSTEM AND METHOD FOR MANAGING ECONOMIC DEVELOPMENT INFORMATION filed Oct. 18, 2004. This application also hereby incorporates by reference all subject matter set forth in U.S. Provisional Application 60/619,861.

**BACKGROUND AND SUMMARY**

In a dynamic economy, the fortunes of industries adjust because of changes in preferences, technology, international trade, and government regulations. As industries change, demand for occupations and skills adjust as does the need for various training and instructional programs. Accordingly, an information system is needed to help economic and workforce developers, policymakers, educators, incumbent workers, jobseekers, and students assess alternative paths that take into account the expected need for occupations and skills.

The systems and methods described herein provide a comprehensive arrangement for gathering raw data such as economic development and workforce development information including historical and forecasted economic data, organizing that data in a database in a manner in which it can be usefully mined, analyzing the data with a plurality of user selectable analytical tools and presenting mined and organized data to an end user in a way that answers a user's inquiry via a web-based interface. Inventions described herein relate to the manner of gathering the data, the manner of organizing it, the manner of mining that data, the tools that can be selected and utilized by the end user and the overall manner of providing these data in a convenient web accessible manner.

In the past, some of this type of information has been obtained from various government documents and websites. However, the process of collecting and linking the data to make it useful has been cumbersome and often required strong analytical skills. Consequently, information seekers either ignored the information or did not ascertain the full implication of the available information. In this environment, analysts were forced to spend hours collecting, manipulating, and analyzing the disparate sources of data. By the time all necessary data were collected, adjusted, and analyzed, the information often became outdated, sometimes leading to incorrect decisions.

In order to provide a system for better-decision making for economic and workforce developers, policymakers, educators, incumbent workers, jobseekers and students, there is now provided a web-based information system including decision support to assist users in considering alternative decision paths. Such alternative decision paths include, for example, whether to offer or take secretarial training in light of expected growth rates and future job opportunities in a local economy. The inventions are collectively referred to as a "system" throughout this document. The system described herein is implemented using a relational database and graphical user interface that allows a user to query the database to mine the appropriate information addressing a question and then report the mined information in the form of reports, charts, tables, and maps. Dynamic decision support (e.g., as to whether or not to offer certain courses at an educational institution or to attract particular industries to a region) pro-

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vides information and recommendations to decision makers, tailored to the geographic region, industry, and/or occupation required by the user.

The use of the claimed system allows a user to increase productivity and leads to better decision making. Users are able to quickly select and utilize analytic tools that provide answers to questions that formerly took days or weeks, even months to compile. Also, help tools are provided to guide the user with information and guidelines for interpreting and using data mined from the database.

Economic development, workforce development and education key information outputs, such as historical and forecasted economic data regarding economic variables including but not limited to jobs, unemployment, wages, and/or productivity, etc., and/or any changes therein are stored in a database. The presently preferred database is an SQL database. Access to the data stored in the database are provided via a web portal running on a data server coupled to the Internet. Users access the data using a web browser client. Data stored in the database are updated from time to time, such as, for example, monthly and/or quarterly. User tools are provided for assembling and processing the data in ways meaningful to the user.

The user tools allow the historical and/or forecasted economic data to be provided in various forms useful to the end user including, for example, charted and/or rendered forms. The economic data can be correlated to a user-selected economic variable and/or any of a wide variety of user-selectable parameters, such as:

region (e.g., state, metropolitan statistical area (MSA), planning district commission (PDC), workforce investment area (WIA), county, and/or city, etc.);  
 industry (e.g., 2- through 5-digit standard industrial classification (SIC) and/or North American Industry classification system (NAICS), and/or uncoded industry, etc.);  
 employer characteristic (e.g., size, legal structure, headquarters location, historical behavior (e.g., rapid growth, local growth, quality of growth, prone to layoffs, etc.), etc.);  
 occupation (e.g., standard occupational code (SOC), etc.); and/or  
 worker attribute (e.g., credential, knowledge, experience, skill, and/or ability, etc.);  
 demographics (e.g., age, gender, education, etc.); etc.

Historical and/or forecasted economic variables include, for example, jobs, occupations, and/or attributes. These historical and/or forecasted economic variables can comprise statements and/or estimates of supply and/or demand, which can utilize and/or integrate any of numerous potential factors.

For example, historical and/or forecasted economic variables such as wages, jobs, occupations, worker attributes, employment, and/or unemployment, etc. They can relate to, be determined from, and/or comprise absolute values and/or changes, events, emergencies, growths, declines, shifts, trends, and/or patterns relating to factors such as:

macro-economics (e.g., gross domestic product (GDP), per-capita income, prices, inflation, interest rates, exchange rates, balance of trade, government spending, etc.);  
 population;  
 demographics;  
 consumer spending;  
 travel and/or tourism;  
 technology (from the broadest to the narrowest sense of the term);  
 number of employed;

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type of employed (e.g., full-time, part-time, hourly, salary, etc.);  
 number of unemployed;  
 type of unemployed (e.g., underemployed and/or actively seeking, etc.);  
 emerging workforce (e.g., arising from academic and/or other training, entry- and/or lower-level positions, horizontally transitioning, in-migration, etc.);  
 fading workforce (e.g., retiring, expiring, transitioning away (vertically and/or horizontally), out-migration, etc.); and/or  
 personal characteristics (e.g., education, sex, and/or age, etc.); etc.

Using government-provided data for occupation-related worker attributes, occupations can be automatically mapped into occupation groups using data mining and mapping tools incorporating algorithms. Within each occupation group, training ladders can be generated, the training ladders indicating what worker attributes are needed and/or desired to obtain and/or maintain each occupation, to move from one "rung" to another in a "vertical" progression in a career, and/or to "horizontally" change occupations and/or careers, etc.

A user-selected worker attribute, from among many available worker attributes, can be mapped to degrees, certificates, courses, trainings (including training that is on-the-job, hands-on, and/or experiential, etc.), and/or salaries by industry etc., that are suggested and/or required to obtain and/or maintain that selected worker attribute. This mapping can extend to post-academic, post-graduate, graduate, undergraduate, associate, military, technical, vocation, high school, pre-high school, and/or other degrees, certificates, courses, and/or trainings.

This mapping can be general and/or specific. For example, one or more particular courses of study can be mapped to specific regional academic institutions offering each course, the times the course is offered, the capacity of the course, admission and/or registration procedures, the cost of the course, the availability of and/or requirements for financial aid, textbooks and/or other materials required and/or suggested, etc. Similar mapping can be provided for off-campus coursework, such as on-line and/or correspondence courses. Conversely, such mapping can forecast the demand and/or need to provide various degrees, certificates, courses, and/or trainings, etc.

For any user-selected parameter, performance related to any relevant economic criteria can be determined, measured, estimated, rendered, and/or tracked. Likewise, objectives, goals, and/or plans related to any user-selected economic criteria can be selected, entered, measured, and/or tracked at any desired time and/or frequency. Notifications can be provided if performance deviates by a user-determined value from a goal, average, and/or norm, etc. Examples of economic criteria can include:

- entrepreneurial activities;
- productivity;
- wealth creation;
- employer retention;
- knowledge base and/or workers;
- economic diversity;
- utilization of community assets (e.g., academic and/or training resources, such as institutions, facilities, and/or personnel; programs; services, etc.); and/or
- commuting patterns; etc.

Thus, for example, for a given region, a goal related to entrepreneurial activities can be set and performance against that goal by the region can be tracked and/or reported in the

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balanced scorecard. A notification can be provided, such as via an e-mail message to a predetermined individual, if for example, quarterly performance exceeds the goal by more than 5 percent, and/or falls below the goal by more than 3 percent.

For any user-selected parameter, leading and/or lagging indicators can be used to determine performance related to any relevant economic variable and/or criteria. For example, with respect to knowledge base, knowledge workers, worker credentials, and/or worker skill level, a leading indicator such as high school drop-out rates, and/or a lagging indicator such as general educational development (GED) award rates, can be utilized.

For any user-selected region, a desirability index can be generated and/or rendered, the index providing an indication of the desirability of attracting and/or retaining one or more user-selected and/or known industries, employers, and/or occupations, etc. The index can be based on knowledge and/or estimates regarding factors related to each industry, employer, and/or occupation, etc., such as whether it pays above-market wages, whether it is likely to grow, whether it is likely to hire locally, and/or whether it provides worker training, etc. The factors can be filtered, adjusted, and/or weighted as desired.

The database contains a critical mass of workforce and economic development data (refreshed and supplemented regularly), the building blocks to wealth, to users at every level of economic development, workforce development, education reform, partnership consulting, human resources, corporate operations, and so forth. The interactive web-based system described herein provides capabilities that include regional specific economic indicators like employment trends, regional wealth, productivity of a region's workforce, entrepreneurial activities, high-technology trends, and forecasts for occupations and industries for every metropolitan statistical area, planning district commission, workforce area, county and city in a state.

Using the system a user can obtain specialty information by ad-hoc query about the economic trends for the users region in the state. It removes traditional barriers between workforce and economic development analysis by aggregating and mining data for each user to understand the dynamic relationship of key economic indicators on current and future industry and occupation trends unique to their region. Brick and mortar economies undergo chum and the new economy emerges seeking a knowledgeable savvy labor market. The system matches trained workers to available jobs and allows workforce development officials to underpin economic development strategies by providing an inventory of workers who are:

- Employed
- Unemployed
- Underemployed
- Emerging

The system delivers secure, responsive, high-quality, customer-oriented services and support fostering a productive web-enabled database capable of mining key economic and workforce development indicators. Analyzed and organized data from the system can be used as building blocks for engineering a vibrant regional workforce aligned to the strategic goals of the economic development communities. The system is easily and rapidly accessed via a web interface and provides seamless data mining of critical analytics that result in a reliable information coordination environment between workforce development officials, economic development practitioners, education reformers, high-technology industries and occupations, and job seekers.

User selectable analytical tools tie together high-quality government and CEA data along with help tutorials to identify and select alternative actions for a region.

Economic Development officials can benefit from using the system. Economic Development agencies can make informed decisions about their regions industry capabilities that include the knowledge and skills attributes of the local workforce. Among the user tools provided, the system includes the following dashboard analytics (vital economic statistics) for the economic developer end user:

Labor Market and Industry Demand Forecasts by Occupation

Entrepreneurial Activities

Labor Market Inventory

Employment and Unemployment trends

The user, via a standard web browser and Internet access, is presented with a “dashboard” of choices from which he can mine data from the SQL database and apply analytical tools. The user can use this dashboard presentation to drilldown to specific data related to questions at hand and obtain more detailed information about a region’s economic and workforce metrics. Gaps for skills shortages allow workforce agencies to develop regional training strategies for retooling the local labor market based on the economic development regional and local strategies for the regions. Labor and industry demands offer a roadmap for strategic initiative planning and resource allocation based on the best fit industry to workforce alignments.

The system is useful for Workforce Development officials. Workforce Development (WD) officials supply Economic Development (ED) and Education (EDU) reform process owners with current data about the attributes of the local workforce. The system provides a web-based, interactive method to track a region’s changing workforce performance relative to a baseline and goals over time. WD can provide ED with the following important statistics about a region’s workforce today and discuss strategies for future workforce initiatives to meet the needs of potential firms desiring to locate in the WD and ED region:

Employed

Unemployed

Underemployed

Emerging

The system can serve as a useful tool in recruiting new firms and employees to a geographical region. It provides information about the current and future economy for the region as it relates to the supply of workers and the demand for workers based on industry needs. Identification of supply and demand results in the occupational and instructional program gap metrics as well as current and projected inventories of occupations and skills.

It has been nearly impossible to find the caliber of data required for understanding the workforce capabilities for all communities in a given state. It is a daunting task for economic development folks to find as complete a source of quality, up-to-date, and objective data that they can use to benchmark their community against any other in the state. The system includes complex analytical tools that calculate the aggregate skills, knowledge and abilities of the region’s workforce and compare these profiles to the current and future demands for these attributes by industry and labor market demands using CEA proprietary technology.

#### BRIEF DESCRIPTION OF THE DRAWINGS

FIG. 1 is a schematic diagram providing an overview of the inventions.

FIG. 2 is a schematic diagram showing that data from various sources are gathered and, after processing, stored in database 112.

FIG. 3 is a flow chart explaining how data from data sources 120 are manipulated and stored into database 112.

FIG. 4 is a schematic diagram explaining the structure of database 112.

FIG. 5 is a schematic diagram explaining CEA datamart database 134 (see FIG. 3)

10 FIG. 6 is a diagram of a login screen of the “JobsEQ™ web pages which provides a vehicle for delivering data from database 112 to a web-based end user.

FIG. 7 is a diagram showing a post login main menu of the “JobsEQ™” web pages.

15 FIGS. 8, 9 and 10 are screenshots of the upper, middle and lower portions (when scrolling) of a “Digital Dashboard” from which a user can navigate the JobsEQ™ web pages after login.

FIG. 11 is a flowchart showing the general process flow 20 explaining how data are extracted from the database, manipulated and delivered to an end user.

FIG. 12 is a schematic diagram showing an example of how a user obtains information related to “Total Wages”.

FIG. 13 is a screenshot of the “Total Wages” screen to 25 which a user is taken after clicking on the “Total Wages” chart on the “Digital Dashboard” shown in FIGS. 8, 9 and 10.

FIG. 14 shows an example of how a user obtains information related to “Annual Average Wages Per Worker”. The region’s relative individual wealth creation can be analyzed 30 by locale.

FIG. 15 shows an example of how a user can drill down to obtain cost of living information.

FIG. 16 shows an example of how a user obtains information reflecting the percentage change in employment.

35 FIG. 17 shows an example of how a user obtains information regarding quarterly entrepreneurial activity.

FIG. 18 shows an example of how a user obtains information regarding annual entrepreneurial activity.

FIG. 19 shows an example of how a user obtains information 40 regarding labor inventory.

FIG. 20 shows an example of a first drill down for more detailed labor inventory data.

FIG. 21 shows an example of a second drill down for more 45 detailed labor inventory data.

FIG. 22 shows an example of part two of a labor inventory data drilldown.

FIG. 23 shows an example of data retrieval related to the 50 unemployment rate drilldown. These choices are represented by the flow chart blocks shown in the upper portion of the figure.

FIG. 24 illustrates the production of a map showing percentage change in employment from a year ago.

FIG. 25 illustrates the production of a chart showing labor 55 and supply and demand. Menu choices from the web page are represented by the flow chart blocks shown in the upper portion of the figure.

FIG. 26 shows an example of a chart produced to demonstrate “Labor Supply and Demand for Richmond.”

60 FIG. 27 shows an example of a chart produced to demonstrate “Labor Supply and Demand for the Northern Virginia MSA”. Of course the geographical region used is merely exemplary.

FIG. 28 illustrates the on line help manual available to 65 users.

FIG. 29 illustrates the production of “Career Training Ladders”.

FIG. 30 is a schematic diagram illustrating the production of a “Willing and Able” chart. The Willing and Able tool allows the user to specify an occupation and to then examine related occupations for their appeal as career-change options.

FIG. 31 graphically represents a gap in employment in the medicine/dentistry field.

FIG. 32 is a graphical representation of occupations with the largest forecasted growth and decline in a particular region.

FIG. 33 is a schematic diagram illustrating a “What If” report. The ‘What If Report’ is identified on the ‘development and policy’ analytics under ‘member options.’

FIGS. 34 and 35 are schematic diagrams (upper and low portions of screens, respectively) illustrating the balanced scorecard analytic which is part of the policy development category for JobsEQ™.

#### DETAILED DESCRIPTION

FIG. 1 is a schematic diagram providing an overview of the inventions. The information and decision support system according to the inventions is generally denoted by reference numeral 100. System 100 gathers raw data, such as economic statistics, from a various data sources, collectively denoted by reference numeral 120. Data from these various data sources 120 are manipulated by processes collected denoted by reference numeral 122 and ultimately stored in an SQL database 112 residing in a data base server 110. Database server 110 manages database 112 and serves data from database 112 to end users via a web server 102. In its presently preferred form, end users interact with system 100 via a collection of web pages collected known as “JobsEQ™”, a trademark of Chmura Economics & Analytics, LLC (CEA). Web server 102 serves the various web pages of JobsEQ™ and data retrieved from database 112 to end users 140, 142 and 144 via the Internet 104. End users 140, 142 and 144 can access system 100 using a standard web browser, such as Internet Explorer, running on a computer such as computers 150, 152 and 154.

FIG. 2 is a schematic diagram showing that data from various sources are gathered and, after processing, stored in database 112. The figure shows twelve exemplary data sources. Particular data sources and types of data are design choices. There may be many more than twelve such data sources, or fewer. In the presently preferred arrangement of system 100, data are retrieved from the following sources:

- Statistics Canada
- State Departments of Education
- CEA Proprietary Data
- U.S. Census
- U.S. Bureau of Labor Statistics (BLS) Household Employment Survey
- BLS ES-202 Quarterly Census of Employment and Wages (QCEW)
- BLS ES-203 Characteristics of the Unemployed
- BLS O\*NET
- National Center for Education Statistics
- U.S. Department of Defense
- BLS Occupational Employment Statistics (OES)
- Census Local Employment Dynamics (LED)
- American Chamber of Commerce Rating Association (ACCRA)

These data are received in various forms including, for example, flat files and other data configurations. Processes 122, shown generally in FIG. 1 and in greater detail in FIG. 3, include various algorithms and processes for converting the data from data sources 120, which may be in various disparate

forms in their respective native formats, into formats of data appropriate to store into a plurality of tables in database 112.

FIG. 3 is a flow chart explaining how data from data sources 120 are manipulated and stored into database 112. These processes are collectively referred to by reference numeral 122. Raw data, collectively 120, are parsed at step 124 and stored in a CEA Raw Data Storage Database 126. It is presently preferred that raw data are processed one quarter at a time for convenience. Of course this is a matter of design choice. It happens to be convenient based on hardware currently selected and utilized. One quarter of the raw data are stored in a data storage location 128. At step 130 North American Industry Classification System (NAICS) crosswalk is applied. This crosswalk transforms the new data in the following three ways: 1) data with a Standard Industrial Classification code (the precursor to NAICS) but no NAICS is given the proper NAICS code; 2) NAICS codes that still possess codes under the NAICS 1997 system are given the proper NAICS 2002 code; and 3) NAICS with ‘unknown’ codes that have SIC codes are given the proper NAICS code. The data are then normalized at step 132. Normalized data are then stored in a CEA DataMart Database 134. At step 136, data are aggregated by year, quarter, industry and region. Non-disclosure rules are applied to the data at step 138. The thus processed data are then stored in database 112. Flow chart elements 128-138 are repeated for each quarter of the data so that all of the raw data are processed and stored into database 112.

Database 112 includes multiple tables (twenty two in the presently preferred embodiment). Data from the various data sources is gathered and reorganized into the tables of database 112. The organization of data in database 112 in part makes it possible for a user to obtain answers to various inquiries.

FIG. 4 is a schematic diagram explaining the structure of database 112. Database 112 includes multiple tables that are linked as shown in the FIG. 4. Each block in the figure represents a table. The upper portion of each table block shows one or more fields of data that are primary keys. Multiple primary keys are known in the database world as “compound keys.” The lower portion of a table block shows the remaining fields of data that are not primary keys.

As shown in FIG. 4, there are twenty two (22) tables in database 112 as presently preferred. As an example, the “Industry Matrix” table has three fields of data, two of which are primary keys (“IndustryType” and “Industry Code”). The third field, not a primary key, is “IndustryName.” The lines between table blocks indicate links between fields in different tables. In some cases, linked fields have the same exact name, but in other cases, a different field name is used. The symbols at link points (“crows feet”) indicate the dependency of one table on another in the standard manner practiced by database programmers.

FIG. 4 crosswalks a number of databases thus allowing estimated up-to-date occupation, education, and skill gaps that can be forecast into the future based on industry and occupation forecasts. For each region specified within JobsEQ™, the industry mix of that region is a starting point from which total occupations are estimated based on the distribution of occupations-to-industries in the region, state, or nation. The algorithm takes the percent distribution of occupations and assumes the same distribution occurs in the region. For example, if 2% of all workers in the textile industry are secretaries, then it is assumed that 2% of the specified region’s occupations related to textiles are secretaries. Education, training, and skills needed for occupations are estimated in a like manner by using crosswalks or CEA data mining that links the information to occupations.

Forecasts of occupations and industries, which reflect the supply for workers as well as the demand for workers, identifies current and future estimated gaps in the region selected by assuming that occupations and industries in the region grow at the same rate as those of the nation. For example, if 90% of a region's employment is in textiles, then the region's employment will be forecast to decline because the textile industry is forecast to decline in the nation. In contrast, a region where 90% of employment is in professional services will be forecast to grow because professional services is forecast to be a fast growing industry in the nation.

Data from the various data sources are gathered and reorganized into the tables of database 112. The organization of data in database 112 in part makes it possible for a user to obtain answers to various inquiries. Three exemplary tables with sample records are illustrated below.

Three exemplary tables with sample records are illustrated below.

The following are sample records from the "Total Unemployment" table.

Year	Qtr	RegionType	RegionCode	Unemployment
2004	4	1	3	165
2004	3	1	3	160
2004	2	1	3	150
2004	1	1	3	159

The following are sample records from the "Region Matrix" table.

RegionTyp	RegionCode	RegionName
1	1	Accomack
1	3	Albermarle
1	5	Alleghany

The following are sample records from the table "Employment Projections by Industry" table.

RegionType	RegionCode	NAICS	OccupationCode	NAICSGrowth	ProjectEmployment
1	1	236118	41-9099	8.31	0.1687
1	1	236118	43-3021	8.31	0.00139382

FIG. 5 is a schematic diagram explaining CEA datamart database 134 (see FIG. 3). The CEA datamart database 134 stores Normalized ES-202 data. The CEA datamart database is a database that stores information in a useful form after it has been imported, normalized and otherwise processed as shown in FIG. 3. The CEA datamart database 134 has three tables: "Firm", "Branch", and "BranchData." The "Firm" table stores the name of each company or firm having data in database 112. The "Firm" table includes, for example, the name and address of such companies. The "Branch" table stores information related to each branch (location) of a company including, for example, names under which it trades, geographical designators, local branch addresses, phone numbers, etc. The "Branch Data" table stores economic data related to particular branches. Each branch of a company or firm is assigned a "branchID" designating that branch. Data points related to a particular branch are stored in the "Branch-

Data" table as individual records. There can be multiple records for a given "BranchID." For example, one branch may have a record for each quarter of multiple years.

As shown in FIG. 5, the upper portion of each table block shows one or more fields of data that are primary keys. Multiple primary keys are known in the database world as "compound keys." The lower portion of a table block shows the remaining fields of data that are not primary keys. The symbols at link points ("crows feet") indicate the dependency of one table on another in the standard manner practiced by database programmers.

FIG. 6 is a diagram of a login screen of the "JobsEQ™" web pages which provides a vehicle for delivering data from database 112 to a web-based end user. At this website, prior to login, the user is presented with the following menu:

Menu Options  
 Home Page  
 Become a Member  
 Press Releases  
 Resume Posting  
 About JobsEQ™  
 Contact us

#### Resources

CEA  
 Demo  
 FIG. 7 is a diagram showing a post login main menu of the "JobsEQ™" web pages. After login, the user is presented with the following main menu selections:  
 Labor Analytics  
 Knowledge Analytics  
 Career Analytics  
 Demographic Analytics  
 Policy Development

Each of these main menu selections has sub menu selections as will be further described below.

FIGS. 8, 9 and 10 are screenshots of the upper, middle and lower portions (when scrolling) of a "Digital Dashboard" from which a user can navigate the JobsEQ™ web pages after login. Various clickable choices are presented to the user in the form of chart and graph samples to that illustrate some of

the capabilities of the system. For example, there are clickable charts for: "Total Wages", "Annual Average Wages per Worker", "Change in Employment", "Labor Inventory", "Entrepreneurial Activities Quarterly", "Entrepreneurial Activities Yearly", "Labor Supply and Demand", "Unemployment Rate", and "Productivity".

A powerful feature of the inventions relates to the manner in which pieces of data are related to each other and presented to the user in the form of charts, graphs and maps that allow a user to answer questions that cannot otherwise be easily answered and to have those answers presented in a user friendly manner.

FIG. 11 is a flowchart showing the general process flow explaining how data is extracted from the database, manipulated and delivered to an end user. At block 200, an end user selects a particular analytical tool to be used in extracting data and presenting it in a selected form. When a particular tool is

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selected, the user is presented with various choices for narrowing data that are consistent with the use of the particular tool selected. For example, in block **202** the user selects particular geographical regions, industries and occupation. Data in accordance with the user selection at block **204** is extracted from database **112**. At block **206** the user makes follow up choices regarding geographical regions, industries and occupations. At block **208** the user selects a format for data display. At block **210** data are retrieved from database **212** using the JobsEQ™ analytical tool **214**. A display format is decided at block **216**. Display occurs at block **218**. At block **220** the user has an opportunity to drill down for more detailed data. At block **222** there is a final display of data in chart or table form that can be copy-pasted to other documents such as Microsoft Word, Excel or PowerPoint. Following are specific examples of such data retrieval and display.

FIG. **12** is a schematic diagram showing an example of how a user obtains information related to “Total Wages”. A user can “drill down” into the data stored in database **112** and retrieve data related to wages that relate to a particular geographical region, a particular industry sector, a particular industry group and a particular industry. At the bottom portion of the figure is a block labeled “Jobs EQ™ Digital Dashboard” which is shown in screenshots in FIGS. **6**, **7** and **8**. By clicking on the “Total Wages” chart displayed on the “Jobs EQ™ Digital Dashboard”, the user is presented with a screen as shown in FIG. **13**.

FIG. **13** is a screenshot of the “Total Wages” screen to which a user is taken after clicking on the “Total Wages” chart on the “Digital Dashboard” shown in FIGS. **8**, **9** and **10**. From the total wages drilldown screen shown in FIG. **11**, a user can select a particular: “Report Type”, “Region Level”, “Baseline Region”, “County or City”, “Industry Sector”, “Industry Group” and “Industry”. These choices are made using pull down menus in the upper portion of the screen. In FIG. **12**, these choices are represented by the flow chart blocks shown in the upper portion of the figure. When a user selects “Total Wages”, he is presented with a series of pull down menu choices represented by the diamond shaped blocks in the upper portion of FIG. **12**. Menu choices available in each category are consistent with previously made menu choices. Thus, the menus are “intelligent” and do not allow the user to attempt to assemble data that are not logically consistent. After the menu choices are made that specify “Industry Sector”, “Region”, etc., at block “Stored Data SQL” data are retrieved from database **112**. The data are processed in accordance with “Stored Procedures” and transformed into time series data which are then graphed for presentation to the user. Specifically, a structured query language (SQL) query is used to transform the data from the format stored in the JobsEQ™ database into time-series data.

The “Total Wages” data displayed is quarterly (that is, the total wages earned in a region over the course of a given quarter). Recessions are identified by shading. Total wages are the broadest indicator of the total wealth of a region. Changes in total wealth measure the degree to which a region’s standard of living is changing. The Total Wages chart can be used to track trends in wealth creation across all industries or in specific industries. Information obtained from the Total Wages charts, along with the Percent Change in Employment and Annual Average Wages per Worker charts, provides insight to questions such as: Are total wages rising because of average wage growth, employment growth, or both? Are living standards in a given region increasing in tandem with other regions? How reliant on a particular industry is a region? Which industries are contributing the most to wealth creation?

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FIG. **14** shows an example of how a user obtains information related to “Annual Average Wages Per Worker”. A user can “drill down” into the data stored in database **112** and retrieve data related to average annual wages per worker relating to a particular geographical region, a particular industry sector, a particular industry group and a particular industry. As with “Total Wages” the user can begin by making choices from the “Jobs EQ™ Digital Dashboard” which is shown in screenshots in FIGS. **8**, **9** and **10**. The user can begin to drill down for “Annual Average Wages Per Worker”. The user can select “Region”, “Industry Sector”, “Industry Group” and “Industry”. These choices are made using pull down menus in the upper portion of the screen. In FIG. **14**, these choices are represented by the flow chart blocks shown in the upper portion of the figure. When a user selects “Annual Average Wages Per Worker”, he is presented with a series of pull down menu choices represented by the diamond shaped blocks in the upper portion of FIG. **10**. Menu choices available in each category are consistent with previously made menu choices. Thus, the menus are “intelligent” and do not allow the user to attempt to assemble data that is not logically consistent. After the menu choices are made that specify “Industry Sector”, “Region”, etc., at block “Stored Data SQL” data are retrieved from database **112**. The data are processed in accordance with “Stored Procedures” and transformed into time series data which are then graphed for presentation to the user. Specifically, a structured query language (SQL) query is used to transform the data from the format stored in the JobsEQ™ database into time-series data.

The chart displays the annual average wages per worker over time. Information is shown for the selected region, the state, and the peer (if applicable). This chart can also be specialized for a specific industry as chosen through the selection criteria. The data displays quarterly changes. Recessions are identified by shading. (See Charts—Menu Bar and Functions for information on chart functionality.) In the illustrated example, as of the first quarter of 2003 the average worker in Southwest Virginia was making \$26,299 a year. The average worker in the state of Virginia was making \$37,924. These figures represent the total wages and salaries (including some stock options that were exercised) in the region divided by the total number of workers in that region.

#### Chart Applications

- 45** To measure the relative average individual wealth growth of a region, which reflects changes in living standards.
- To identify industries making the greatest contribution to relative individual wealth.
- To analyze historical trends.
- By selecting areas within a region, the region’s relative individual wealth creation can be analyzed by locale.

FIG. **15** shows an example of how a user can drill down to obtain cost of living information. This information is found in a table below the chart that displays the annual average wages per worker over time. Information is shown for the selected region, the state, and the peer (if applicable). This table showing cost of living adjusted wages and salaries can also be specialized for a specific industry as chosen through the selection criteria. The data in the table displays the cost of living adjusted wages and salaries for the latest quarter of data available. The Cost of Living Index estimates the relative price levels for consumer goods and services. When applied to wages and salaries, the result is a measure of relative purchasing power. This table displays information for the selected region, its peer (if applicable), the state, and the nation.

	Cost of Living Index (base US)	Cost of Living Index (base Virginia)	Annual Average Salary	VA Purchasing Power	US Purchasing Power
01 - Southwest VA W1A	78.2	83.0	\$26,298	\$31,669	\$33,625
17 - West Piedmont W1A	80.6	85.6	\$25,903	\$30,273	\$32,143
Virginia	94.2	100.0	\$37,924	\$37,924	\$40,266
US	100.0	106.2			

This table enables the user to estimate the relative cost of labor in Virginian regions that is attributable to cost of living differences. For example:

Using the numbers in the above table, we find that it is 17.0% less expensive to live in WIAOne than the average Virginia county or city. As a result, the lower wages paid in WIAOne can be stretched further because residents in WIAOne tend to pay lower prices for many goods and services as well as rents and mortgage payments. Because of the lower cost of living, an individual in WIAOne earning \$26,298 has the same purchasing power as the average Virginia resident that earns \$31,669. Thus, if a WIAOne resident earning \$26,298 per year decided to move out of the area and into a typical state county, that individual would need to earn \$31,669 to maintain their standard of living.

FIG. 16 shows an example of how a user obtains information reflecting the percentage change in employment. This chart displays the percentage change in employment over time. Information is shown for the selected region, the state, and the peer (if applicable). The second chart in FIG. 14 shows that three trend lines appear when ‘peer’ is chosen. The ‘peer’ is a region pre-determined by the client or chosen based on analytics in JobsEQ™ that identifies a peer based on the region’s population size, industry mix, and ruralness. This chart can also be specialized for a specific industry as chosen through the selection criteria. The third chart shows total employment where government institutions are not included in the total. For example, state or federal hospitals would not be included in total employment if the ‘separate out government’ box is checked by the user. The data displays quarterly changes. Recessions are identified by shading. (See Charts—Menu Bar and Functions for information on chart functionality.)

#### Chart Applications

Are some regions facing a greater decline in employment than others?

Which industries are posting the largest increases or decreases in employment?

Are changes in employment levels cyclical?

How is employment affected by recession periods?

FIG. 17 shows an example of how a user obtains information regarding quarterly entrepreneurial activity. These choices are represented by the flow chart blocks shown in the upper portion of the figure. When a user selects “Quarterly Entrepreneurial Activity”, he is presented with a series of pull down menu choices represented by the diamond shaped blocks in the upper portion of FIG. 10. Menu choices available in each category are consistent with previously made menu choices. Thus, the menus are “intelligent” and do not allow the user to attempt to assemble data that is not logically consistent. After the menu choices are made that specify “Industry Sector”, “Region”, etc., at block “Stored Data SQL” data are retrieved from database 112. The data are

processed in accordance with “Stored Procedures” and transformed into time series data which are then graphed for presentation to the user.

Specifically, a structured query language (SQL) query is used to transform the data from the format stored in the JobsEQ™ database into time-series data.

For the selected criteria, this chart will display the historical number of exiting and entering entrepreneurial firms in a region by quarter.

The following are definitions of terms used herein:  
Entrepreneurial firms—firms with ten or fewer employees (also referred to as ‘small businesses’)

Exiting firms—entrepreneurial firms that shut down operations or leave the specified region during a time period  
New firms—entrepreneurial firms beginning operations during a time period (including those entering a specified region)

The Entrepreneurial Activities chart can be specialized by region, industry, or occupation (see Analytic Comparison). When drill-down by occupation is selected, the chart will display information on entrepreneurial firms that use that occupation. (See Charts—Menu Bar and Functions for information on chart functionality.)

#### Applications

This chart can be used to gauge the innovative capacity of a regional economy in terms of small business activity. Innovative capacity is a region’s ability to innovate and adapt to changing market conditions. One method of analysis is to look for ‘cross-over points’—the points in time at which the number of exiting firms equals the number of entering firms.

These points can be found on the charts by identifying all points at which the blue and green lines intersect. Points at which the exiting firms begin to exceed the number of entering firms portend employment decline and further deterioration. When the reverse is true and new firms begin to outpace exiting firms, economic growth is more likely. Because this chart is not seasonally adjusted, the data may display a large number of spikes. More ease of analysis may be obtained with annual data found in Entrepreneurial Activities Yearly, also found on the digital dashboard. Information obtained from the Entrepreneurial Activities Quarterly graphs provide insight to questions such as:

Does the region exhibit high innovative capacity?  
Does the number of small firms exiting exceed the number of small firms entering?

How does the influx and outflow of firms relate to recession periods?

Which industries exhibit greater innovative capacity?

FIG. 18 shows an example of how a user obtains information regarding annual entrepreneurial activity. For the selected criteria, this chart will display the historical number of exiting and entering entrepreneurial firms in a region by year. These choices are represented by the flow chart blocks

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shown in the upper portion of the figure. When a user selects “Annual Entrepreneurial Activity”, he is presented with a series of pull down menu choices represented by the diamond shaped blocks in the upper portion of FIG. 10. Menu choices available in each category are consistent with previously made menu choices. Thus, the menus are “intelligent” and do not allow the user to attempt to assemble data that is not logically consistent. After the menu choices are made that specify “Industry Sector”, “Region”, etc., at block “Stored Data SQL” data are retrieved from database 112. The data are processed in accordance with “Stored Procedures” and transformed into time series data which are then graphed for presentation to the user. Specifically, a structured query language (SQL) query is used to transform the data from the format stored in the JobsEQ™ database into time-series data.

The Entrepreneurial Activities chart can be specialized by region, industry, or occupation (see Analytic Comparison). When drill-down by occupation is selected, the chart will display information on entrepreneurial firms that use that occupation. (See Charts—Menu Bar and Functions for information on chart functionality.)

#### Applications

This chart can be used to gauge the innovative capacity of a regional economy in terms of small business activity. Innovative capacity is a region’s ability to innovate and adapt to changing market conditions. One method of analysis is to look for ‘cross-over points’—the points in time at which the number of exiting firms equals the number of entering firms. These points can be found on the charts by identifying all points at which the blue and green lines intersect. Points at which the exiting firms begin to exceed the number of entering firms portend employment decline and further deterioration. When the reverse is true and new firms begin to outpace exiting firms, economic growth is more likely. Information obtained from the Entrepreneurial Activities Yearly graphs provide insight to questions such as:

- Does the region exhibit high innovative capacity?
- Does the number of small firms exiting exceed the number of small firms entering?
- How does the influx and outflow of firms relate to recession periods?

Which industries exhibit greater innovative capacity?

FIG. 19 shows an example of how a user obtains information regarding labor inventory. The Labor Inventory tool, found on the digital dashboard, provides information on the composition of the workforce in a given region as well as detailed information on any given occupation. The following charts and tables are available in this tool (with applications listed below):

Labor Inventory Charts—the initial chart shows

% of workforce by industry in a given region

% of workforce by firm size

% of workforce by industry and given firm size

Employment by Occupation Chart (see FIG. 20)—obtained by clicking on an industry slice of the Labor Inventory by Industry Chart (Labor Inventory Charts shown in FIG. 17)

% employment by occupation within an industry. Average Wages by Industry & Employment Occupation by Detail (see FIG. 21)—obtained by clicking on an occupation slice of the Employment by Occupation Chart (see FIG. 20) average wages in a region by industry % employment by minor occupation. An Occupation Profile (see FIG. 22) is obtained by clicking on a slice of the Employment Occupation by Detail Chart. Occupation attributes are broken down by knowledge, skills, ability, and activity.

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FIG. 20 shows an example of a first drill down for more detailed labor inventory data. The Labor Inventory tool, found on the digital dashboard, provides information on the composition of the workforce in a given region as well as detailed information on any given occupation. The following charts and tables are available in this tool (with applications listed below):

Labor Inventory Charts—the initial charts shown

% of workforce by industry in a given region

% of workforce by firm size

% of workforce by industry and given firm size

Employment by Occupation Chart—obtained by clicking on an industry slice of the Labor Inventory by Industry Chart (Labor Inventory Charts)

% employment by occupation within an industry

Average Wages by Industry & Employment Occupation by Detail—obtained by clicking on an occupation slice of the Employment by Occupation Chart

average wages in a region by industry

% employment by minor occupation

Occupation Profile is obtained by clicking on a slice of the Employment Occupation by Detail Chart. Occupation attributes are broken down by knowledge, skills, ability, and activity.

FIG. 21 shows an example of a second drill down for more detailed labor inventory data. An Average Wages by Industry chart is obtained by drilling down through the Labor Inventory by Industry Chart and the Employment by Occupation Chart. This chart displays the average wages for industries in a given region. The specific industry selected in the drill-down process will be highlighted.

FIG. 22 shows an example of part two of a labor inventory data drilldown. A chart of Employment Detail for Occupations is obtained by drilling down through the Labor Inventory by Industry Chart and the Employment by Occupation Chart. This chart displays the mix of workers within the selected occupation broken down by minor occupation group. By clicking on one of the minor occupation groups in this chart, the user obtains access to the Occupation Profile.

FIG. 23 shows an example of data retrieval related to the unemployment rate drilldown. These choices are represented by the flow chart blocks shown in the upper portion of the figure. When a user selects “Unemployment Rate”, he is presented with a series of pull down menu choices represented by the diamond shaped blocks in the upper portion of FIG. 12. Menu choices available in each category are consistent with previously made menu choices. Thus, the menus are “intelligent” and do not allow the user to attempt to assemble data that is not logically consistent. After the menu choices

are made that specify “Industry Sector”, “Region”, etc., at block “Stored Data SQL” data are retrieved from database 112. The data are processed in accordance with “Stored Procedures” and transformed into time series data which are then graphed for presentation to the user. Specifically, a structured query language (SQL) query is used to transform the data from the format stored in the JobsEQ™ database into time-series data.

The Unemployment Rate chart, found on the digital dashboard, displays the percentage of the labor force that is unemployed. The unemployment rate is determined by dividing the total number of unemployed workers by the total labor force. The total labor force is the sum of both the employed workers and the unemployed workers. This chart displays data for the selected region, the state, and the peer (if applicable). (See selection criteria regarding the selection process.) Unemployment data by industry can be obtained via an Ad-Hoc Report. The data displayed are monthly. Recessions are identified by

shading. (See Charts—Menu Bar and Functions for information on chart functionality.) This chart has a built-in scrolling function. The dark scroll bar in the bottom right corner of the chart can be slid along the horizontal axis to view data as far back as 1990.

#### Applications

In addition to the Percent Change in Employment chart, the Unemployment Rate chart is an alternate measure of the strength or weakness of a region's labor market. High unemployment in a region reflects labor market weakness. However, the unemployment chart should be used with caution. For instance, a declining unemployment rate may reflect the fact that the labor force is declining (people are leaving the region) rather than an improving labor market. In addition, the unemployment rate is considered a less reliable measure than changes in employment because the unemployment rate is derived mainly from surveys while employment figures are obtained from tax filings representing 98% of all employed. This chart can be also used to monitor unemployment rate trends to determine whether a region is susceptible to business cycle trends (cyclical unemployment) or industrial trends (structural unemployment). Cyclical unemployment is associated with a shift in the business cycle that causes a downturn in economic activity (i.e., a recession). In contrast, structural unemployment arises when employer's needs do not match workforce skills, education, or training. Information obtained from the Unemployment chart provides insight to questions such as:

Does the region exhibit higher or lower unemployment than the state?

Does the region's unemployment trend (increases and decreases) mirror the states?

How has unemployment been affected by recession periods?

Are any unemployment trends in evidence?

FIG. 24 illustrates the production of a map showing % change in employment from a year ago. The Percentage Change in Employment maps identifies employment gains or losses for all counties and cities in a state. The user can choose from two time-period options: From Last Quarter and From Last Year. (The From Last Quarter changes are not seasonally adjusted.) This figure is illustrative of the system's mapping capability. Map templates can be "stuffed" with data mined from database 112 in answer to various queries and displayed in this user friendly manner.

As a second example (not illustrated) one could produce a map showing the unemployment rate. The Unemployment Rate map displays the percentage of the labor force that is unemployed in the counties in Virginia. The unemployment rate is determined by dividing the total number of unemployed workers by the total labor force. The total labor force is the sum of both the employed workers and the unemployed workers. All counties and cities in the state are shown when this analytic is chosen.

As a third example (not illustrated) one could produce a map showing commuting into a region. The Commuting Into a Region map identifies the number of workers that commutes into the region of interest. The region of interest is defined by the user by means of drop down lists that allow for the choice of 'Region Level', 'Baseline Region', and 'County or City'.

FIG. 25 illustrates the production of a chart showing labor and supply and demand. Menu choices from the web page are represented by the flow chart blocks shown in the upper portion of the figure. When a user selects "Labor Supply and Demand", he is presented with a series of pull down menu choices represented by the diamond shaped blocks in the

upper portion of FIG. 10. Menu choices available in each category are consistent with previously made menu choices with the added feature of allowing the user to choose the supply and demand by industry or occupation. Thus, the menus are "intelligent" and do not allow the user to attempt to assemble data that is not logically consistent. After the menu choices are made that specify "Industry Sector", "Region", etc., at block "Stored Data SQL" data are retrieved from database 112. The data are processed in accordance with "Stored Procedures" and transformed into time series data which are then graphed for presentation to the user. Specifically, a structured query language (SQL) query is used to transform the data from the format stored in the JobsEQ™ database into time-series data.

This important tool, found on the digital dashboard, can forecast the supply and demand of labor for a given region. Labor can be analyzed by industry or occupation. Eight different scenarios are offered in this help section to illustrate the interpretations and uses of the typical output graphs.

#### Industry Drill-Downs:

- I. Industry in decline; component occupations faring better
- II. Industry in decline; component occupations declining faster
- III. Industry in expansion; component occupations trailing
- IV. Industry in expansion; component occupations faring better

#### Occupation Drill-Downs:

- V. Regional industries in decline; occupation faring better
- VI. Regional industries in decline; occupation declining faster
- VII. Regional industries in expansion; occupation trailing
- VIII. Regional industries in expansion; occupation faring better

#### Industry Drill-Downs:

- I. Industry in decline; component occupations faring better
- In this scenario, employment in an industry is forecast to decline (the green line is falling). Occupations that are employed by that industry, however, are either not forecast to decline as much or are forecast to expand (the red line is above the green line). This scenario is the result of these component occupations also being used in one or more other industries that are either expected to expand employment or at least not contract as rapidly as the selected industry.

Therefore, if a region faces this scenario with an industry forecast to decline, but component occupations are forecast to fare significantly better than the industry (the red line is much higher than the green line), then there may be good prospects for workers in the given industry who will lose their jobs; i.e. there exist healthier industries which also employ their occupation. Some of these prospects, however, may be outside the region. The closer the red line is to the green in this scenario, the fewer prospects for the unemployed job-seeker in the same occupation. The numbers in the right margin of the chart indicate employment represented by each line for the last year of the forecast (above, the year 2012).

II. Industry in decline; component occupations declining faster (Industry drill-down). In this scenario, employment in an industry is forecast to decline (the green line is falling) but the component occupations are forecast to have a steeper decline (the red line is below the green line). This scenario is the result of there being few, if any, industries healthier than the selected industry that employs most of the component occupations. Therefore, if a region contains such an industry, workers in the industry who become unemployed will very likely struggle to find openings for their occupation in another industry.

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III. Industry in expansion; component occupations trailing (Industry drill-down). In this scenario, employment in the industry is forecast to expand (the green line is rising). Occupations that are employed by that industry, however, are either not forecast to expand as much or are forecast to decline (the red line is below the green line). This scenario is the result of the given industry growing at an above-average rate for industries that use the component occupations. Such a growing industry would have a high demand for its component occupations. Even though the occupations may be expanding across the nation, even though more workers may be getting trained for these occupations, there is a high chance of a shortage of these occupations in the selected region. The supply will be hard-pressed to keep up with the demand. This potential training gap would carry ramifications to educators as well as practitioners in economic development.

FIG. 26 shows an example of a chart produced to demonstrate "Labor Supply and Demand for Richmond."

FIG. 27 shows an example of a chart produced to demonstrate "Labor Supply and Demand for the Northern Virginia MSA". Of course the geographical region used is merely exemplary.

FIG. 28 illustrates the on line help manual available to users. Users can access the on line help manual by clicking on the question mark (?) above the chart or clicking 'Help' which is found in the upper right hand corner of each screen. The help function explains such items as the analytics found in JobsEQ™, the data sources, and how to apply the analytic. In addition, definitions of occupations, industries and instructional programs can be found by inserting key words in the search box found in the help section.

FIG. 29 illustrates the production of "Career Training Ladders." Career training ladders identify the career paths that individuals may follow (across or within industries) as they increase their knowledge and capabilities. Career training ladders are particularly useful to job-seekers and training professionals. The career training ladders shown in JobsEQ™ detail the vertical relationships among occupations that were created by CEA using data mining techniques. Within each occupation family, a worker in lower-level occupations can move to higher-level ones through proper training and experience.

The illustrated example of a career ladder is the nursing occupation family which is embedded in the Medicine and Dentistry Ladder. A worker can move from low-level occupations such as Home Health Aides, to Nursing Aides, to Licensed Practical and Vocational Nurses, all the way to Registered Nurses. Characteristics of the occupation are used to vertically link occupations. The numbers on the career training ladders that are shown in parentheses represent an estimate of the number of individuals in the given region that are employed in that occupation.

The user can obtain the following information for the occupation by clicking on the occupation title in the training ladder: description of the occupation; wages for the occupation for various industries; skills and other attributes needed to succeed in the occupation; and instructional programs suggested to qualify for the occupation.

FIG. 30 is a schematic diagram illustrating the production of a "Willing and Able" chart. The Willing and Able tool allows the user to specify an occupation and to then examine related occupations for their appeal as career-change options.

For this analysis, the user must first select a major occupation and then a minor occupation (see occupation selection for more details). The data for the minor occupation will then be displayed when the Go button is clicked. Regional selection is also an option for this analytic. The chart produced is

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shown in Figure CA. Each of the small squares represents an occupation. When the mouse pointer is moved over a square and held stationary, a pop-up text will identify the name of the occupation as well as the average salary for the occupation in the region selected. This analysis considers a worker in the selected occupation who may be looking to enter a different occupation. This person is considered "willing" to take a new job that requires no more than a 10% pay cut from a present or previous job. The horizontal line across the middle of the chart (at approximately \$26,000 in the above example) represents this threshold. Above the line are occupations the person would be "willing" to take, below the line would be occupations the person would be "not willing" to take.

Occupations that someone would be "able" to enter are those in which little or no training is required beyond current qualifications. Occupations that a worker would be "not able" to enter are those that may be related to the person's present occupation, but would require more extensive training, education, or experience.

#### Applications

This tool has primary applications in workforce development. For example, a group of workers may have been laid-off and there are no prospects for their current occupations; they will be in need of career changes. The four quadrants in this analysis group potential new occupations by their appeal:

"Willing/Able"—Upper-right quadrant. Occupations in this category will require little further training and will offer salaries ranging from a small pay cut to a salary increase.

"Willing/Not Able"—Upper-left quadrant. Occupations in this category offer suitable salaries but will require more extensive training or education preparation.

"Not Willing/Able"—Lower-right quadrant. Occupations in this category require little further training but the salaries constitute more than a 10% cut in pay.

"Not Willing/Not Able"—Lower-left quadrant. Related occupations in this category are likely the least desirable for a career change. These require more extensive training or education and also offer salaries that would be more than a 10% cut in pay. Nevertheless, they are related occupations, and they may be the only ones that have growth prospects in the region in question (see occupation drill-downs in Labor Supply and Demand for analysis of this question).

FIG. 30 illustrates the method used to produce the chart shown in FIGS. 31 and 32.

FIG. 31 graphically represents a gap in employment in the medicine/dentistry field.

FIG. 32 is a graphical representation of occupations with the largest forecasted growth and decline in a particular region. This process identifies gaps in occupations or training programs expected to occur over the next ten years. True equilibrium takes into account the demand for an occupation and/or individuals with certain training/degrees on the industry side and on the supply of such individuals on the occupation side. JobsEQ™ adjusts the gaps to include dynamics statistics like the emerging workforce (those entering the workforce for the first time), the number unemployed, population growth rates, retirements and other impacts to the type and inventories of workers by region.

FIG. 33 is a schematic diagram illustrating a "What If" report. The 'What If Report' is identified on the 'development and policy' analytics under 'member options.' It identifies the estimated number of workers required in an industry chosen by the user by using the drop down industry choices noted in earlier analytics. By using the selection criteria the user can select a region, an industry, and a firm size for a test scenario. The user can also select the number of occupations to show

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for the firm (explained in more detail below). After all criteria are selected, clicking on the “Go” button will start the analytic and display the results.

The resulting table shows detailed information for each occupation that would be required to support the given firm. The following fields are shown:

Occupation code (SOC Code)

Occupation title

Required Employees—Number of employees needed in the specified occupation.

Current Employees—Number of employees currently employed in the occupation.

Current Unemployed—Number of workers unemployed in the occupation.

State Average Wage—Average wage for selected occupation in the given region.

National Average Wage—Average wage for selected occupation for the nation.

Employment Extended—Number of currently employed workers in other occupations who have the skills to fulfill the specified position’s needs.

Unemployed Extended—Number of currently unemployed workers in other occupations who have the skills to fulfill the specified position’s needs.

The analysis for the impact of a firm closing follows closely the analysis of a firm relocation. To see the impact of a firm closing, the relocation analysis is performed as described above, but for the firm size a negative number is entered instead of positive. The results will appear similar, but the numbers in the required employment column now represent lost employment due to the firm closing.

Applications of the ‘what if report’ include the following:

If a firm enters a region, what occupations will be needed?

Are skilled workers available in the region to fill these positions?

Does the region have currently unemployed workers with skills similar enough to fill the new firms needs?

If a firm is leaving a region, what occupations are expected to be lost?

The following is an explanation of “Extension Occupations” used for the ‘what if’ and training ladder maps. The process used to find related occupations is based on the vector model. This involves giving each occupation a location in a multi-dimensional space based upon a set of attributes in one of the following categories: abilities, knowledge, skills, interests, tasks, and work activities. Each attribute in this set is given a weight between 0 and 1. After computing this vector for each occupation, the cosine distance formula is used to measure the similarity of two occupations.

The cosine distance formula is defined as the following:

$$\frac{\sum_{i=1}^{|T|} f(v_i) \cdot f(w_i)}{\sqrt{\sum_{i=1}^{|T|} f(v_i)^2} \cdot \sqrt{\sum_{i=1}^{|T|} f(w_i)^2}}$$

Where v and w represents two occupations and T represents the complete set of attributes in a particular category. In this formula, the function f represents a dampening function, which is log. When two occupations have similar attributes, their vectors become coincident and the cosine distance approaches 1. If the occupations are unrelated, the vectors will be orthogonal with a value approaching 0.

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This method is repeated for each category of attributes. The total cosine distances are combined with equal weights (%). Therefore, we define the final similarity of two occupations as the following:

$$OccupationSim(A, B) = \sum_{t \in \text{Categories}} w_t \cdot \text{cossim}(A_t, B_t)$$

FIGS. 34 and 35 are schematic diagrams (upper and low portions of screens, respectively) illustrating the balanced scorecard analytic which is part of the policy development category for JobsEQ™.

With JobsEQ™, you get the most complete balanced scorecard solution for workforce, economic, and education development and policy reform brings together the various ‘silo’ agencies across localities, regions, states and countries for:

#### 20 Strategy

The Strategy component captures and organizes Balanced Scorecard information. It translates volumes of data into meaningful information about enterprise output that can be viewed from many perspectives, including vision, mission, strategy, objectives, measures and initiatives. An appropriate balanced scorecard can scan from top to bottom, providing a corporate-level scorecard, then moving on to views of business units, departments and so on; the view of the user is balanced with the day-to-day activities of the user such that the user’s performance is measured in terms of activities over which the user’s ‘sphere of influence’ is directly linked.

#### Communications

A scorecard offers an accurate assessment of the progress users have made translating strategy into action. It can monitor key leading and lagging indicators—allowing you to assess which strategies are yielding the desired results while working within the best practices for Baldridge and Sixth Sigma business norms. The Communications component provides a way to communicate a strategy to the rest of the organization. Strategic Performance Management offers enabling options which facilitate collaborative efforts, empowering organizations with integrated strategies and development environments.

#### 45 Updateable

A complete information-analysis solution must do more than just provide data access. It should also enable the analysis of data outputs in new and different ways while simultaneously anticipating business trends and policy reforms. Strategic performance management automates the implementation of a balanced scorecard—enabling users to update the scorecard at regularly scheduled intervals. Users can query, report, forecast and simulate economic trends modeling. Users can access all relevant data sources immediately knowing that performance results are based on the latest, most accurate input to the scorecard.

The inventions have been explained in part by using many examples. References to time, geographical regions, etc. are intended to be exemplary. The principles explained in this patent can be utilized with data relating to various regions, time frames, etc. Thus, it is intended that the claims not be limited to specific geographical regions, time frames, etc.

The invention claimed is:

1. An information system for assessing demand for occupations and skills and the need for various training and instructional programs comprising:

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- a. a relational database resident in a computer-readable medium containing economic development information, workforce development information and education key information, such as historical and forecasted economic data regarding economic variables including jobs, unemployment, wages, productivity, and any changes therein;
  - b. a graphical user interface providing distributed computer network access to said database and a plurality of software implemented user tools for assembling and processing the data in ways meaningful to the user, including correlation of the information in said database by one or more of the following parameters: region, industry, employer characteristic, occupation; worker attribute; demographics, said graphical user interface and said tools being operable to allow a user to selectively retrieve analysis of one or more of the following:
    - i. forecast the supply and demand of labor for a given region;
    - ii. career training ladders identifying the career paths that individuals may follow or firms may utilize to improve their internal labor force;
    - iii. related occupations for their appeal as career-change options;
    - iv. occupations with the largest forecasted growth and decline in a particular region;
    - v. the estimated number of workers required in an industry chosen by the user; and
    - vi. workers available in the region by skill,
- wherein said graphical user interface and said tools are operable to allow a user to selectively retrieve analysis of the workers available in a region for a user-selected industry on a user readable display indicating:
- a plurality of occupations;
  - a number indicating the number of required employees for each of said occupations;
  - a number indicating the number of employed persons in said region corresponding to each of said occupations; and
  - a number indicating the number of unemployed persons in said region corresponding to each of said occupations, wherein one of said software implemented tools assigns an occupation attribute value between 0 and 1 for each of a plurality of pre-defined occupation attributes to each of said occupations;
  - wherein said software implemented tool assigns an occupation vector in multi-dimensional space to each of said occupations based on said occupation attribute values corresponding to each of said occupations;
  - wherein said software implemented tool computes the angular cosine distance between every pair of said occupation vectors utilizing a cosine distance formula; and
  - wherein said software implemented tool classifies a first occupation as an extension occupation in relation to a second occupation if said first occupation is similar to said second occupation when said angular cosine distance between the occupation vector corresponding to said first occupation and the occupation vector corresponding to said second occupation is less than a pre-determined threshold; and
  - c. a computer for processing said data.

2. An information system for assessing demand for occupations and skills and the need for various training and instructional programs comprising:
  - a. a relational database resident in a computer-readable medium containing economic development information, workforce development information and education key information, such as historical and forecasted eco-

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- nomic data regarding economic variables including jobs, unemployment, wages, productivity, and any changes therein;
  - b. a graphical user interface providing distributed computer network access to said database and a plurality of software implemented user tools for assembling and processing the data in ways meaningful to the user, including correlation of the information in said database by one or more of the following parameters: region, industry, employer characteristic, occupation; worker attribute; demographics, said graphical user interface and said tools being operable to allow a user to selectively retrieve analysis of one or more of the following:
    - i. forecast the supply and demand of labor for a given region;
    - ii. Career training ladders identifying the career paths that individuals may follow or firms may utilize to improve their internal labor force;
    - iii. related occupations for their appeal as career-change options;
    - iv. occupations with the largest forecasted growth and decline in a particular region;
    - v. the estimated number of workers required in an industry chosen by the user; and
    - vi. workers available in the region by skill,
- wherein said graphical user interface and said tools being operable to allow a user to selectively retrieve analysis of related occupations for their appeal as career-change options in a region provide a user readable display indicating:
- a four-quadrant chart;
  - wherein the four quadrants of said chart are: 1) Not willing, not able, 2) Not willing, but able, 3) Willing, but not able, and 4) Willing and able;
  - wherein all occupations in said region are represented on said chart as a data point in relation to a user of said information system
  - wherein “willing” is defined as an occupation with a salary at or above a pre-defined percentage of said user’s current or most recent salary;
  - wherein “not willing” is defined as an occupation with a salary below said pre-defined percentage of said user’s current or most recent salary;
  - wherein “able” is defined as an occupation with skills similar to the skills of said user’s current or most recent occupational position; and
  - wherein “not able” is defined as an occupation with skills dissimilar to the skills of said user’s current or most recent occupational position; and
  - c. a computer for processing said data.
3. The information system of claim 2 wherein said pre-defined percentage of said user’s current or most recent salary is 90%.
  4. The information system of claim 2
- wherein said software implemented tool assigns an occupation attribute value between 0 and 1 for each of a plurality of pre-defined occupation attributes to each of said occupations in said region;
- wherein said software implemented tool assigns an occupation vector in multi-dimensional space to each of said occupations based on said occupation attribute values corresponding to each of said occupations;
- wherein said software implemented tool assigns an occupation attribute value between 0 and 1 for each of said plurality of pre-defined occupation attributes to said user’s current or most recent occupational position;
- wherein said software implemented tool assigns a position vector in multi-dimensional space to said user’s current or most recent occupational position based on said occu-

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pation attribute values corresponding to said user's current or most recent occupational position; wherein said software implemented tool computes the angular cosine distance between said position vector and each of said occupation vectors utilizing a cosine distance formula;

wherein said software implemented tool classifies each of said occupations as an "able" occupation if the angular cosine distance between the occupation vector corresponding to said occupation and the position vector corresponding to said occupational position is less than or equal to a pre-determined threshold; and

wherein said software implemented tool classifies each of said occupations as an "not able" occupation if the angular cosine distance between the occupation vector corresponding to said occupation and the position vector corresponding to said occupational position is greater than a pre-determined threshold.

**5** 5. The information system of claim **4** wherein said graphical user interface proportionally spaces said occupations in a user readable format on said chart to indicate the relative similarity of occupations based on said angular cosine distance calculations.

**10** 6. The information system of claim **4** wherein said graphical user interface proportionally spaces said occupations in a user readable format on said chart to indicate the relative salaries of occupations.

**15** 7. The information system of claim **4** wherein said pre-defined occupation attributes are selected from the group consisting of: abilities, knowledge, skills, interests, tasks, and work activities.

**20** 8. The information system of claim **4** wherein said cosine distance formula comprises a dampening function.

**25** 9. The information system of claim **8** wherein said dampening function is a logarithmic function.

**30** 10. The information system of claim **2** wherein said graphical user interface groups similar occupations together into an occupation family.

**35** 11. A method for electronically estimating from a relational database whether a region has enough unemployed workers with skills suitable to fill a firm's employment needs and displaying the estimation in a user readable format comprising the steps of:

- a) determining the number of new employees needed by a firm;
- b) determining the occupational position required for each of said needed new employees;
- c) determining the number of unemployed workers in a region;
- d) determining the occupation of each of said unemployed workers;
- e) determining which unemployed workers have occupations similar to said required occupational positions of said firm; and
- f) displaying a report in a user readable format indicating the number and occupation of unemployed workers in a region with skills suitable to fill said firm's employment needs, wherein step e comprises:

defining a plurality of occupation attributes; assigning an occupation attribute value between 0 and 1 for each of said occupation attributes to each of said required occupational positions of said firm; assigning a position vector to each of said required occupational positions; wherein said position vector is a vector in multi-dimensional space according to each of said occupation attribute values of said occupational position;

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assigning an occupation attribute value between 0 and 1 for each of said occupation attributes to each of said occupations of said unemployed workers; assigning an occupation vector to each of said occupations; wherein said occupation vector is a vector in multi-dimensional space according to each of said occupation attribute values of said occupation; computing the angular cosine distance between every position vector and every occupation vector utilizing a cosine distance formula; and classifying the occupation of an unemployed worker as suitable to fill said firm's employment needs if the angular cosine distance between the occupation vector corresponding to said occupation and one of said position vectors is less than a pre-determined threshold.

**12** 12. The method of claim **11** wherein said occupation attributes are selected from the group consisting of: abilities, knowledge, skills, interests, tasks, and work activities.

**13** 13. The method of claim **11** wherein said cosine distance formula comprises a dampening function.

**14** 14. The method of claim **13** wherein said dampening function is a logarithmic function.

**15** 15. The method of claim **11** wherein similar occupations are grouped together into an occupation family.

**16** 16. A method for electronically analyzing from a relational database related occupations in a region for their appeal as a career-change option comprising the steps of:

- a) determining the occupations in said region;
- b) determining the salary of each of said occupations;
- c) determining whether each of said salaries is at or above a pre-defined percentage of a user's current or most recent salary; and
- d) determining whether each of said occupations is similar to a user's current or most recent occupational position, wherein step d comprises:

defining a plurality of occupation attributes; assigning an occupation attribute value between 0 and 1 for each of said occupation attributes to each of said occupations in said region; assigning a position vector to each of said occupations; wherein said position vector is a vector in multi-dimensional space according to each of said occupation attribute values of said occupations; assigning an occupation attribute value between 0 and 1 for each of said occupation attributes to said user's current or most recent occupational position; assigning a position vector to said occupational position; wherein said position vector is a vector in multi-dimensional space according to each of said occupation attribute values of said occupational position; computing the angular cosine distance between said position vector and each of said occupation vectors utilizing a cosine distance formula; and classifying each of said occupations as similar to said user's current or most recent occupational position if the angular cosine distance between the occupation vector corresponding to said occupation and said occupational position vector is less than a pre-determined threshold.

**17** 17. The method of claim **16** wherein said occupation attributes are selected from the group consisting of: abilities, knowledge, skills, interests, tasks, and work activities.

**18** 18. The method of claim **16** wherein said cosine distance formula comprises a dampening function.

**19** 19. The method of claim **18** wherein said dampening function is a logarithmic function.

**20** 20. The method of claim **19** wherein similar occupations are grouped together into an occupation family.

\* \* \* \* \*

# **EXHIBIT B**



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*Developing a "Strategic Compass" Template for Workforce  
and Economic Strategic Planning*

Prepared for:

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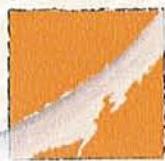
Project Title : Developing a "Strategic Compass" Template for Workforce and Economic Strategic Planning



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September 13, 2006

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Dear Teresa,

**Ref: Developing a "Strategic Compass" Template for Workforce and Economic Development Strategic Planning**

Dear Teresa,

Chmura Economics & Analytics (CEA) is pleased to provide WIN with a proposal to develop a blueprint template for workforce and economic development strategic planning.

Attached is a statement of work including scope, approach, and pricing for your review. JobsEQ™ (under the WIN brand) serves as the foundation of the solution we propose. The strategic compass will be 'powered by JobsEQ® in the form of a 'template' that will allow users to track the progress of their region over time relative to specific goals.

Thank you, Teresa, for your interest in CEA products and services. We are looking forward to this potential opportunity to work with you. Please call or e-mail if you need additional information. My contact details are 804-649-1107 (office) and 804-512-7437 (mobile) or [leslie.peterson@chmuraecon.com](mailto:leslie.peterson@chmuraecon.com).

Sincerely,

A handwritten signature in black ink, appearing to read "Leslie Peterson".

Leslie Peterson  
Director of Operations, Partner



## Background

Worldwide Interactive Network (WIN) clients in workforce, economic development, and education need a systematic process for measuring their human capital development and regional economic trends. For that reason, Chmura Economics & Analytics (CEA) has been asked to develop a web-based tool for assessing and aligning workforce indicators with regional economic trends. The analysis will tie the trends in the regional economies to the occupations and skills characteristic of these localities. From this analysis, local workforce, economic developers, and educators can strategically plan to continuously strengthen and sustain economic development by aligning workforce policies toward meeting the current and forecasted demands of the business communities within these regions.

To move to a 'blueprint' that will be seamless and effective will take changes in public attitudes, passions, and policy. Changing the workforce system in a generation will require systemic and systematic changes in every area of public policy impacting human capital. "Systemic" in that the changes must alter how capital and income streams flow within and through the system; "systematic" in that to really work, the changes must compliment and reinforce each other to create momentum that is greater than that of a single policy reform or new program.

In order to know how to design the blueprint for economic and workforce development, a comprehensive but easy-to-use database is required to show the relationships between human capital and economic health. CEAs proprietary JobsEQ® will be used to identify issues such as the current and future gaps between worker skills and the skills demanded by employers to help localities understand what is needed in the short-term as well as to prepare for the future.

This document explains the CEA approach toward providing gap information in a meaningful way to WIN clients. From this analysis, WIN clients can refresh their thinking in two areas: the mix of policies required to bring about fundamental change in the performance of the workforce investment, education and economic development systems and second, what it will take politically for such substantive changes to occur. In this manner, WIN clients can collaborate with its partners to change the entire system as opposed to making small islands of change.



## The Big Picture

CEA will provide an analysis of the regional economies in terms of current and forecasted growth while benchmarking the economic growth to the skills of the workforce. From this baseline, CEA can determine where the gaps are within the regions fastest changing industries as well as targeted industries and clusters. Industry cluster and sector strategies make it possible to focus on key regional industries. By bringing workforce, education and the economy together under a set of macro and micro indicators, clients are able to see policy and program reforms as they relate to:

- Economic development challenges such as global competition, labor market outsourcing, critical skills shortages, aging workforce and linking to local economic and education initiatives and strategies. Cluster strategies foster innovation and competitive advantage in global markets by focusing attention on key industries and information about their needs.
- Workforce development issues such as serving low-income workers and sustaining middle-income occupations; skill levels that do not meet businesses needs; poor quality across industries and occupations. Cluster-based strategies can help create new jobs and new opportunities by promoting education and training programs, developing career ladders, and moving the human capital 'meter' toward higher skills to help employers grow and prosper.
- Resource concerns that improve flexibility and responsiveness to benefit businesses and employees. Cluster-based strategies allow workforce, education, and economic development practitioners to form seamless strategies making it possible to work across individually funded programs and focus priorities in the same strategic direction.

## Objectives

The objective of the analysis is to capture the essence of how each region in a given state is currently poised to underpin economic development efforts that lead to job creation for the region. The product will be created in a 'template' that is portable to any region in the United States. The overarching goals for the product are to determine the strengths and weaknesses for the local economies as they relate to:

1. Increasing the numbers of total jobs,
2. Increasing the concentration of demand-driven, better-paying jobs, and
3. Addressing the needs for future jobs based on forecasted future economic growth and targeted industries and industry clusters.



Attention will be directed to the major design principles for the creation of a balanced scorecard for measuring the effectiveness of key strategies. Emphasis will be placed on accountability measures for managing dimensions of change.

## Deliverables

CEA will meet the needs of WIN clients through the following three deliverables:

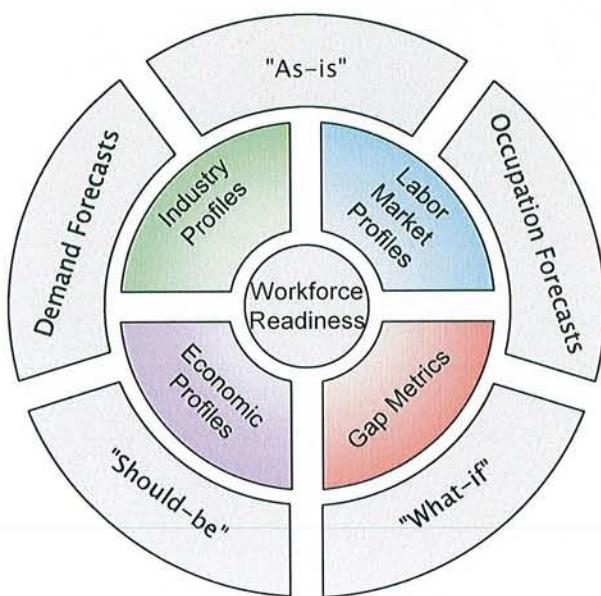
1. JobsEQ®. CEAs proprietary web-based software will serve as the basis of the data needed for analysis. It will be created with the WINs brand-image with all web pages noted as "Powered by JobsEQ™."
2. Strategic planning. Data from JobsEQ™ as well as current strategies of the regions and state will be used to identify the drivers of growth that will be tracked in the strategic compass.
3. Strategic compass. The strategic compass will be added to JobsEQ™ in the form of a template that will allow users to track the progress of their region over time relative to specific goals.

The regional analysis provided by CEA will include the following for each region:

- Industry cluster analysis
  - Earnings by job
  - Alternative occupations
  - Career training ladders (to include WIN Work Keys data)
- Occupation cluster analysis
- Demand occupations
  - In-depth sector analysis
- Labor supply to meet demand occupations
- Gaps
- Willing & Able job matches
- Education supply and demand by instructional programs
- Academic performance indicators
- Education gaps
- Skills analysis
- Demographic trend analysis
- The emerging workforce
- Total wealth
  - Wages and salaries
  - Poverty
- Fastest growing industries (current and forecast)
- Fastest declining industries (current and forecast)



The data provided will allow clients to compare the 'as is' workforce to the 'should be' workforce based on supply shortages and surpluses in degrees, knowledge, skills and abilities.



*The WIN Strategic Compass  
will address 3 major questions:*

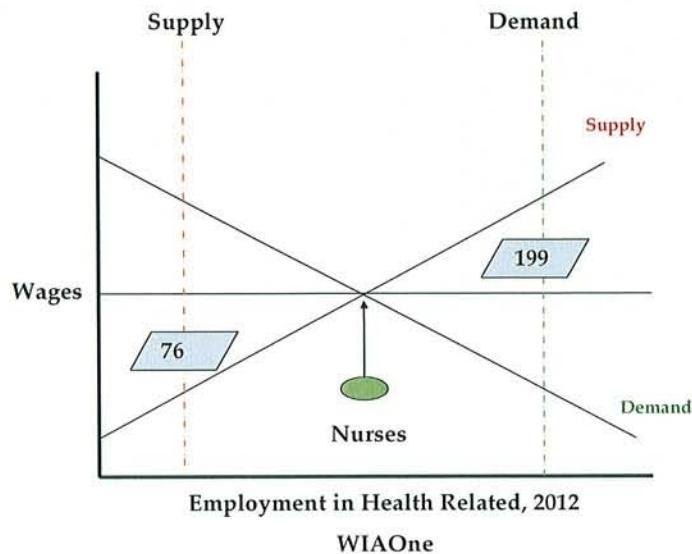
1. *Are we adding more jobs?*
2. *Are we adding better jobs?*
3. *Are we poised for future jobs that create wealth?*

## CEA Approach

CEA understands this analysis will provide analytics pointing non-economists toward greater understanding of the trends of the local workforce for the study region and will have the practical outcome of increasing growth.

CEA uses a method whereby occupations are modeled according to supply and demand of jobs and skills. For example, the chart below shows that the demand for more registered nurses in WIA 1 will be 199 above the current levels in 2012 while the supply of new nurses expected in the region over the same period will only total 76. If policies do not change to encourage more students into nursing (or encourage more nurses to stay in the field longer) then shortages will lead to higher wages and/or lower quality service.





## The WIN Strategic Compass

A discovery process will be used with WIN and their clients to determine the critical tools needed on the strategic compass dashboard. This process will occur after the region is analyzed based on JobsEQ® outputs. Each dashboard will have drill down capabilities to granulate the relative data sets for trend and gap analysis. The Strategic Compass will have the capability to display relational data in a manner that 'tells' the users it is necessary to update their strategic plans to allow for shifts in underlying data supporting their current targets and goals.

Users of the strategic compass will be process owners from economic, workforce, and education development. Users will be able to link local initiatives to state and federal initiatives. Linking strategies can be designed for local, WIA, state, and federal regions.

CEA staff will work with WIN to determine the vision, mission, and strategic intent for WIN clients using the Strategic Compass. The Strategic Compass will allow users to implement Malcolm Baldrige principles into their work flows.

## Professional Arrangements



Leslie Peterson, Director of Operations, Partner, will assume overall responsibility for the process, the pricing,<sup>1</sup> and final products delivered to WIN for this analysis. Christine Chmura, PhD and Chief Economist will oversee the analysis and serve as Chief Economist for this assignment. It is understood and agreed that the client will provide all reasonable support to help CEA achieve a successful project completion within the targeted timeframe. This support is expected to include the following:

- ✓ Timely feedback<sup>2</sup> regarding the initial outputs and trends
- ✓ Work Keys (WIN) data in electronic format
- ✓ Program and administration budget data for each of the 'user groups'
- ✓ Active participation to facilitate the resolution of project-related issues

WIN brand powered by JobsEQ® is expected to be completed within 1 month after the receipt of a signed contract and a 30% retainer. The Strategic Compass is expected to be commercially viable within 6 months.

CEA professional fees for this project are based upon the amount of time estimated to complete the project at the standard billing rates for the individuals assigned. The cost of 1 formal presentation is included in the price below:<sup>3</sup>

---

<sup>1</sup> CEA does not make price information available to our employees. Please limit any pricing discussions to the Director of Operations.

<sup>2</sup> WIN should assist CEA with de-bottlenecking issues associated with the cycle times of the project.

<sup>3</sup> Price does not reflect travel accommodations.



## Total Price

### Chmura Economics & Analytics

#### Discounted Daily Rate for Additional Presentations<sup>‡</sup>

Chris Chmura	\$ 1,200.00
Leslie Peterson	\$ 1,000.00
John Chmura	\$ 800.00

### WIN powered by JobsEQ®

States <sup>**</sup>	2 Users	Additional User <sup>***</sup>
Base	\$ 75,000.00	\$ 4,995.00

### WIN Strategic Compass powered by JobsEQ®

	2 Users	Additional User
Base	\$ 150,000.00	\$ 2,000.00
New State		
Added	65,000.00	\$ 2,000.00

<sup>‡</sup>does not include travel expenses

<sup>\*\*</sup> includes access to all counties in the state

<sup>\*\*\*</sup>15% discount when purchased in blocks of 5

The below signatures are required to execute this contract between CEA and WIN. If the approach outlined in this statement of work is acceptable to WIN, please sign below and return it to me at your earliest convenience. CEA requires a 30% retainer to initiate the Strategic Compass.



September 13, 2006

Leslie Peterson, Director of Operations, Partner

(date)



Teresa C. Chasteen, Ph.D., President, WIN

9/14/2006

(date)



## Use and Disclosure of Content

The content of this proposal shall not be disclosed and shall not be duplicated, used, stored in any retrieval system, transmitted in any form or discussed in whole or in part for any purpose other than to evaluate the deliverables and capabilities of CEA; provided, that if either a subsequent contract is awarded to CEA or Terms of Agreement are defined with CEA as a result of or in connection with the submission of this proposal for work, W-WIN shall not have the right to duplicate, use, or disclose the content to a competitor to CEA. This restriction does not limit the right to use information contained in the proposal if it is available from another source without restriction. Use or disclosure of the proposal is subject to the restriction on the title page of this report.



# **EXHIBIT C**

Chmura Economics & Analytics

1309 East Cary Street, Lower Level  
Richmond, VA 23219

# Invoice

Date	Invoice #
3/28/2009	1287

Bill To
WIN Teresa C. Chasteen, Ph.D., President 1000 Waterford Place Kingston, TN 37663

Description	P.O. No.	Terms	Project
		Due Upon Receipt	
South Carolina Statewide Government Client Enterprise Agency License, 2nd Year, Period: November 1, 2008 - October 31, 2009. Payment for April 2009 Late Fees		Rate	Amount
		11,585.08	11,585.08
		1,216.43	1,216.43
<i>overnight 10 am Dr</i>		<i>PAID 3/31/09 CK# Q0408</i>	<i>0 ENTERED</i>
	Total		\$12,801.51
	Payments/Credits		\$0.00
	Balance Due		\$12,801.51

Chmura Economics & Analytics

1309 East Cary Street, Lower Level  
Richmond, VA 23219

## Invoice

Date	Invoice #
2/27/2009	1277

**Bill To**

WIN  
Teresa C. Chasteen, Ph.D., President  
1000 Waterford Place  
Kingston, TN 37663

P.O. No.	Terms	Project	
Due Upon Receipt			
Description	Qty	Rate	Amount
South Carolina Statewide Government Client Enterprise Agency License, 2nd Year, Period: November 1, 2008 - October 31, 2009. Payment for March 2009 Late Fees		11,585.08 1,390.21	11,585.08 1,390.21
<b>RECEIVED</b> MAR 02 2009 BY: _____  <i>overnight check!</i>		<b>PAID</b> 3/2/09 CK# 20233  <b>ENTERED</b>	
<i>Approved per Jewell G.</i>		Total	\$12,975.29
		Payments/Credits	\$0.00
		Balance Due	\$12,975.29

Chmura Economics & Analytics

## **Invoice**

1309 East Cary Street, Lower Level  
Richmond, VA 23219

Date	Invoice #
2/2/2009	1263

Bill To  
WIN  
Teresa C. Chasteen, Ph.D., President  
1000 Waterford Place  
Kingston, TN 37663

P.O. No.	Terms	Project
	Due Upon Receipt	

# Ovenight Check

PAID  
2/3/09  
CK# 20108



ENTERED

	<b>Total</b>	\$12,367.08
	<b>Payments/Credits</b>	\$0.00
	<b>Balance Due</b>	\$12,367.08

Chmura Economics & Analytics

## Invoice

1309 East Cary Street, Lower Level  
Richmond, VA 23219

Date	Invoice #
12/1/2008	1251

**Bill To**

---

WIN  
Teresa C. Chasteen, Ph.D., President  
1000 Waterford Place  
Kingston, TN 37663

Chmura Economics & Analytics

1309 East Cary Street, Lower Level  
Richmond, VA 23219

# Invoice

Date	Invoice #
12/1/2008	1251

Bill To
WIN Teresa C. Chasteen, Ph.D., President 1000 Waterford Place Kingston, TN 37663

 PAID  
12/9/08  
CK# 198310

Description	Qty	P.O. No.	Terms	Project
			Due Upon Receipt	
South Carolina Statewide Government Client Enterprise Agency License, 2nd Year, Period: November 1, 2008 - October 31, 2009.		139,021.00	139,021.00	
 ENTERED				
		Total	\$139,021.00	
11 585.06 x 2 = \$23,170.17		Payments/Credits	\$0.00	
		Balance Due	\$139,021.00	

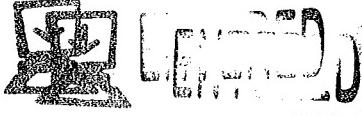
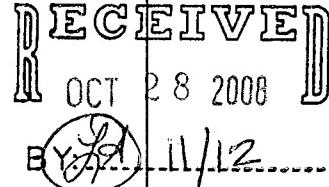
Chmura Economics & Analytics

1309 East Cary Street, Lower Level  
Richmond, VA 23219

# Invoice

Date	Invoice #
10/27/2008	1240

Bill To
WIN Teresa C. Chasteen, Ph.D., President 1000 Waterford Place Kingston, TN 37663

Description	Qty	P.O. No.	Terms	Project
			Due Upon Receipt	
Training for JobsEQ at Harriman, TN (delivered by Chris Chmura) Mileage from Harriman to Richmond Hotel (invoice sent separately)	949.2	1,200.00 -0.505 107.63	585	200.00 479.35 107.63
 PAID 11/12/08 CK# 196068				
				
		Total	\$1,786.98	
		Payments/Credits	\$0.00	
		Balance Due	\$1,786.98	\$1,786.98

See appraisal w/  
attachment

\$1862.91



**Holiday Inn  
EXPRESS®**  
HOTEL & SUITES

10-22-08

Chris Chamura 1309 E Cary St Richmond, VA 23219-4153 US	Folio No. : A/R Number : Group Code : Company : Membership No. : PC 435742293 Invoice No. :	Room No. : 128 Arrival : 10-21-08 Departure : 10-22-08 Conf. No. : 60981935 Rate Code : IGCOR Page No. : 1 of 1
--	--	--

Date	Description	Charges	Credits
10-21-08	*Accommodation	94.00	
10-21-08	State Tax - Room 9.5%	8.93	
10-21-08	City Tax - Room 5.0%	4.70	
	Thank you for staying at Holiday Inn Express Hotel & Suites Harriman. Qualifying points for this stay will automatically be credited to your account. To make additional reservations online, update your account information or view your statement please visit www.priorityclub.com. We look forward to welcoming you back soon.	Total	107.63
		Balance	107.63

**Guest Signature:** \_\_\_\_\_

I have received the goods and / or services in the amount shown herein. I agree that my liability for this bill is not waived and agree to be held personally liable in the event that the indicated person, company, or associate fails to pay for any part or the full amount of these charges. If a credit card charge, I further agree to perform the obligations set forth in the cardholder's agreement with the issuer.

HOLIDAY INN EXPRESS HOTEL & SUITES HARRIMAN  
1885 SOUTH ROANE STREET  
HARRIMAN, TN 37748  
Telephone: (865) 295-0001 Fax: (865) 295-0011

Chmura Economics & Analytics

1309 East Cary Street, Lower Level  
Richmond, VA 23219

# Invoice

Date	Invoice #
10/10/2008	1233

Bill To
WIN Teresa C. Chasteen, Ph.D., President 1000 Waterford Place Kingston, TN 37663

Description	P.O. No.	Terms	Project
		Due Upon Receipt	
Health Sciences Report, TN			
	Qty	Rate	Amount
		670.00	670.00

 PAID  
10/22/08  
CK# D641



ENTERED

Total \$670.00

Payments/Credits \$0.00

Balance Due \$670.00

RECEIVED  
OCT 13 2008

approval  
by Teresa Jia  
email contains

Chmura Economics & Analytics

1309 East Cary Street, Lower Level  
Richmond, VA 23219

# Invoice

Date	Invoice #
9/15/2008	1220

Bill To
WIN Teresa C. Chasteen, Ph.D., President 1000 Waterford Place Kingston, TN 37663

Description	Qty	P.O. No.	Terms	Project
			Due Upon Receipt	
WIB Pak for WIA 4 in Tennessee Three custom regions related to the above WIB Pak	1 3		9,995.00 1,000.00	9,995.00 3,000.00
		Total	\$12,995.00	
		Payments/Credits	\$0.00	
		Balance Due	\$12,995.00	

Chmura Economics & Analytics

1309 East Cary Street, Lower Level  
Richmond, VA 23219

# Invoice

Date	Invoice #
7/22/2008	1202

Bill To
WIN Teresa C. Chasteen, Ph.D., President 1000 Waterford Place Kingston, TN 37663

Description	P.O. No.	Terms	Project
		Due Upon Receipt	
WIB Pack (2 workforce investment board users, 2 economic development users, 6 case managers, 300 active clients where case managers and active clients have limited analytics; workforce investment board and economic development users have full analytics) for Mobile Alabama. Start date: July 25, 2008.	Qty	Rate	Amount
		9,995.00	9,995.00
 			
Federal Identification Number is 54-1923150	Total	\$9,995.00	
	Payments/Credits	\$0.00	
	Balance Due	\$9,995.00	

OK per TC  
AE

Chmura Economics & Analytics

## **Invoice**

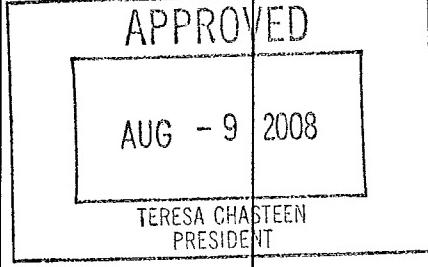
1309 East Cary Street, Lower Level  
Richmond, VA 23219

Date	Invoice #
8/5/2008	1209

**Bill To**

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WIN  
Teresa C. Chasteen, Ph.D., President  
1000 Waterford Place  
Kingston, TN 37663

P.O. No.	Terms	Project			
Due Upon Receipt					
Description	Qty	Rate	Amount		
IT Support for WIN's Skills Bank Application, June 18 - August 5 2008	100	0.67	67.00		
 PAID 8/11/08  CK# 19105		 ENTERED			
TC emailed Approval on 8/11/08		 <div style="border: 1px solid black; padding: 5px; display: inline-block;"> APPROVED  <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td style="padding: 2px;">AUG - 9</td> <td style="padding: 2px;">2008</td> </tr> </table> TERESA CHASTEEN  PRESIDENT </div>	AUG - 9	2008	
AUG - 9	2008				
		Total	\$67.00		
		Payments/Credits	\$0.00		
		Balance Due	\$67.00		

Chrnura Economics & Analytics

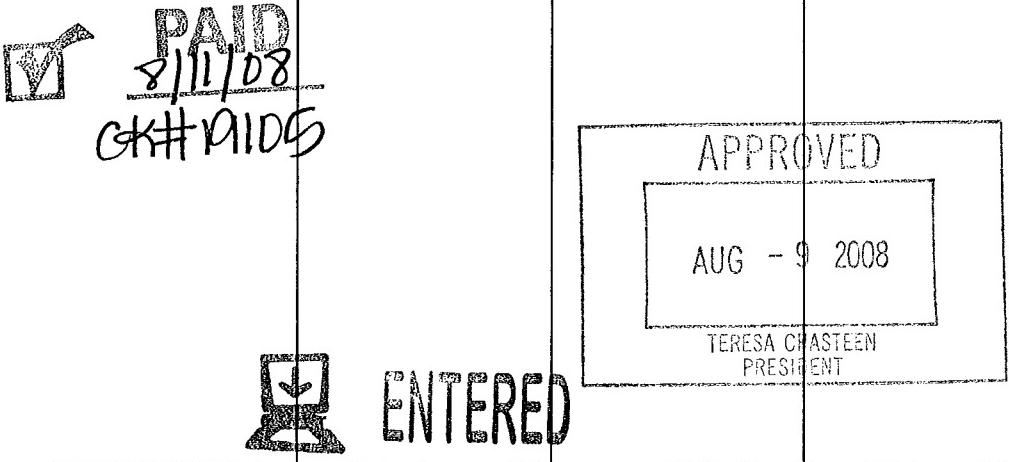
1309 East Cary Street, Lower Level  
Richmond, VA 23219

# Invoice

Date	Invoice #
8/5/2008	1211

Bill To
WIN Teresa C. Chasteen, Ph.D., President 1000 Waterford Place Kingston, TN 37663

P.O. No.	Terms	Project
	Due Upon Receipt	

Description	Qty	Rate	Amount
Training for JobsEQ at Mobile Alabama (delivered by Chris Chmura)		1,200.00	1,200.00
Airline ticket plus 1 bag		576.00	576.00
Hotel and food (receipts will be sent in a separate e-mail)		244.96	244.96
 <p>PAID 8/11/08 GK# PAIDS</p> <p>APPROVED AUG - 9 2008 TERESA CHASTEEN PRESIDENT</p> <p>ENTERED</p> <p>TC emailed approval 8/12/08 (initials)</p>			

Federal Identification Number is 54-1923150	Total	\$2,020.96
	Payments/Credits	\$0.00
	Balance Due	\$2,020.96



**RENAISSANCE.**  
HOTELS & RESORTS

RENAISSANCE RIVERVIEW PLAZA

**GUEST FOLIO**

ROOM TYPE	NAME CNK	RATE CHURRA ECONOMICS & A	DEPART 07/24/08	7:56 ACCT# TIME 7713
ROOM CLERK	ADDRESS 1309 EAST CARY STREET RICHMOND VA 23219	ARRIVE PAYMENT	XXXXXXXXXXXXXX2009	

DATE	REFERENCE	CHARGES	CREDITS	BALANCE DUE
07/24	RM SRVCE 66672502	40.95		
07/24	ROOM 2502, 1	169.00		
07/24	RM TAX 2502, 1	23.66		
07/25	CCARD-AX XXXXXXXXXXXXXX2009		233.61	
				.00



**RENAISSANCE.**  
HOTELS & RESORTS

This statement is your only receipt. You have agreed to pay in cash or by approved payment method or to assign your credit card for all amounts charged to you. The amount shown in the credit column applies any credit card used. In the reference column always will be changed to the credit card number set forth above. (The credit card company will bill to the total amount.) If for any reason the credit card company does not make payment on this account, you will owing such amount. If you are direct billed, in the event payment is not made within 28 days after check-out, you will owe a interest from the check-out date on any unpaid amount at the rate of 1.5% per month (ANNUAL RATE 18%), or the maximum allowed by law, plus the reasonable cost of collection, including attorney fees.

Signature \_\_\_\_\_

Riverview Plaza Hotel  
64 South Water Street  
Mobile, AL 36602  
251.438.4000  
Fathoms Lounge  
CHECK: 2935  
GST CHKID: 11  
SERVER: 24 VICTOR  
DATE: JUL25'08 6:58AM  
CARD TYPE: American Express  
ACCT #: XXXXXXXXXX2009  
EXP DATE: XX/XX  
AUTH CODE: 529341  
RESEARCH: 000000000000  
CHRISTINE CHMURA

SUBTOTAL: 7.15

DNC TRAVEL HOSPITALITY SVCS  
RICHMOND INTERNATIONAL AIRPORT  
EDY'S ICE CREAM/CARIBOU COFFEE  
CHECK: 6576  
SERVER: 1053 L. ONEAL  
DATE: JUL24'08 2:43PM  
CARD TYPE: AMEX  
ACCT #: XXXXXXXXXXXX2009  
EXP DATE: XX/XX  
AUTH CODE: 533336  
CHRISTINE CHMURA

TOTAL: 4.20

TIP \$-----

TOTAL \$-----

Gratuity: -----

TOTAL: -----

x-----  
I agree to pay the above amount  
in accordance with card holder  
agreement.

SIGNATURE  
SIGN ONE COPY AND RETURN  
\*\*\* THANK YOU \*\*\*

## **Chris Chmura**

**From:** travel@expedia.com  
**Sent:** Tuesday, July 15, 2008 10:43 PM  
**To:** chris@chmuraecon.com  
**Subject:** Expedia travel confirmation - Mobile, AL - Jul 24, 2008 - (Itin# 124458453865)

### **Travel Confirmation**

Thank you for booking your trip with Expedia. This email is your receipt for the travel item(s) you just booked; a complete itinerary that includes all applicable ticket numbers, reservation IDs, etc. will follow in the next 4 days.

Remember that you can always view your itinerary online for the most up-to-date information. Our interactive demo can show you how easy it is to get information about your itinerary.



Did you know about all the ways you can earn ThankYou Points on Expedia?

Although this itinerary doesn't qualify for ThankYou Points, you can still earn points if you add a hotel booking today or any time before you travel.

Learn more about how to earn points for future bookings.

Your ticket purchase has not been confirmed by the airline. Please check your complete itinerary after 24 hours have passed for ticket confirmation information.

Total ticket cost:	\$514.99
Taxes & Fees:	\$46.01

Airfare total: \$561.00



**Traveler name:** Christine Chmura

Richmond (RIC) to Charlotte 7/24/08 2:40 pm - 3:55 pm US Airways Operated  
(CLT) By: US AIRWAYS EXPRESS-MESA AIRLINES

Charlotte (CLT) to Mobile 7/24/08 5:40 pm - 6:15 pm US Airways Operated  
(MOB) By: US AIRWAYS EXPRESS-PSA AIRLINES

Mobile (MOB) to Atlanta 7/25/08 5:00 pm - 7:16 pm Delta Operated By:  
(ATL) ATLANTIC SOUTHEAST

Atlanta (ATL) to Richmond 7/25/08 8:07 pm - 9:45 pm Delta Operated By:  
(RIC) ATLANTIC SOUTHEAST



View your itinerary for complete and up-to-date trip details, or to make changes online.

### **Customer Support**

**Itinerary number:** 124458453865

If you have questions about your reservation, fill out our itinerary assistance form. We'll respond within 24 hours. For immediate assistance call Expedia at 1-800-EXPEDIA (1-800-397-3342) or 1-404-728-8787 and have the itinerary number ready.

**What else can we help you with?**

Chmura Economics & Analytics

1309 East Cary Street, Lower Level  
Richmond, VA 23219

# Invoice

Date	Invoice #
6/17/2008	1192

Bill To
WIN Teresa C. Chasteen, Ph.D., President 1000 Waterford Place Kingston, TN 37663

P.O. No.	Terms	Project
	Due Upon Receipt	

Description	Qty	Rate	Amount
Debug work values assessment problems & Fix mail merge timeout in June Final billing in light of end to contract based on e-mail from T. Chasteen on 6/17/08	2.2	100.00	220.00

APPROVED  
JUL 15 2008  
TERESA CHASTEEN  
PRESIDENT

PAID  
7/17/08  
GK# 18963

ENTERED

Federal Identification Number is 54-1923150	Total \$220.00
	Payments/Credits \$0.00
	Balance Due \$220.00

Chmura Economics & Analytics

1309 East Cary Street, Lower Level  
Richmond, VA 23219

# Invoice

Date	Invoice #
5/29/2008	1177

Bill To
WIN Teresa C. Chasteen, Ph.D., President 1000 Waterford Place Kingston, TN 37663

Description	Qty	P.O. No.	Terms	Project
			Due Upon Receipt	
Chris Chmura Presentation to Albany, NY group Airline Ticket		1,200.00 1,255.50		1,200.00 1,255.50
			<input checked="" type="checkbox"/> PAID 10/2/08 CK# 18147	
			Total	\$2,455.50
			Payments/Credits	\$0.00
			Balance Due	\$2,455.50

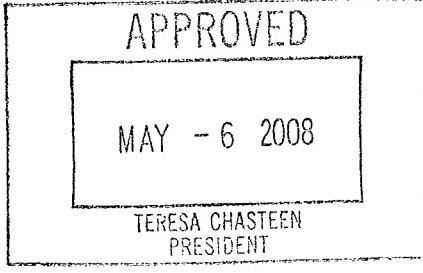
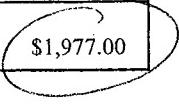
Chmura Economics & Analytics

1309 East Cary Street, Lower Level  
Richmond, VA 23219

# Invoice

Date	Invoice #
5/5/2008	1165

Bill To
WIN Teresa C. Chasteen, Ph.D., President 1000 Waterford Place Kingston, TN 37663

Description	P.O. No.	Terms	Project
		Due Upon Receipt	
IT Support for WIN's Skills Bank Application, April 2008	19.77	100.00	1,977.00
 PAID 05/07/08 CK# 18465			
			
	Total	\$1,977.00	
	Payments/Credits	\$0.00	
	Balance Due	\$1,977.00	

 ENTERED

Chmura Economics & Analytics  
1309 East Cary Street, Lower Level  
Richmond, VA 23219

# Invoice

Date	Invoice #
3/31/2008	1148

Bill To
WIN Teresa C. Chasteen, Ph.D., President 1000 Waterford Place Kingston, TN 37663

Description	P.O. No.	Terms	Project
	Due Upon Receipt		
IT Support for WIN's Skills Bank Application, March 2008	Qty	Rate	Amount
	19.51	100.00	1,951.00
 PAID 04/03/08 CR#18238			
APPROVED APR - 1 2008 TERESA CHASTEEN PRESIDENT			
	Total		\$1,951.00
	Payments/Credits		\$0.00
	Balance Due		\$1,951.00

ENTERED

Chmura Economics & Analytics  
1309 East Cary Street, Lower Level  
Richmond, VA 23219

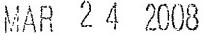
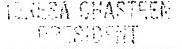
## Invoice

Date	Invoice #
3/21/2008	1142

**Bill To**

---

WIN  
Teresa C. Chasteen, Ph.D., President  
1000 Waterford Place  
Kingston, TN 37663

P.O. No.	Terms	Project	
Due Upon Receipt			
Description	Qty	Rate	Amount
Strategic Compass Training by Chris Chmura on Location, Kingston Tennessee, 2/15/08 Mileage to Kingston, TN from Richmond, VA	934	1,200.00 0.505	1,200.00 471.67
 		<input checked="" type="checkbox"/> PAID 3/25/08 CK# 18168	
		Total	\$1,671.67
		Payments/Credits	\$0.00
		Balance Due	\$1,671.67

 ENTERED

Chmura Economics & Analytics

1309 East Cary Street, Lower Level  
Richmond, VA 23219

# Invoice

Date	Invoice #
3/21/2008	1141

Bill To
WIN Teresa C. Chasteen, Ph.D., President 1000 Waterford Place Kingston, TN 37663

Description	Qty	P.O. No.	Terms	Project
			Due Upon Receipt	
Virtual Strategic Compass Training See accompanying document for dates and attendees	16.5	65.00		1,072.50
 MAR 24 2008 TERESA CHASTEEN 			PAID 3/25/08 CK# 1B148	
		Total		\$1,072.50
		Payments/Credits		\$0.00
		Balance Due		\$1,072.50

 ENTERED

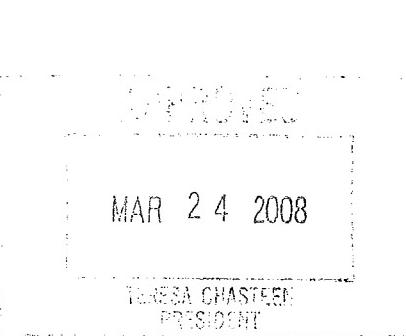
Chmura Economics & Analytics

1309 East Cary Street, Lower Level  
Richmond, VA 23219

# Invoice

Date	Invoice #
3/1/08 (?)	12/20/2007 1106

Bill To
WIN Teresa C. Chasteen, Ph.D., President 1000 Waterford Place Kingston, TN 37663

Description	Qty	P.O. No.	Terms	Project
			Due Upon Receipt	
South Carolina-based Training for the WIN Strategic Compass--Greg Chmura	1		800.00	800.00
Airfare	1		549.09	549.09
Airport Parking	1		16.20	16.20
Hotel Marriott 12/10/2007	1		198.69	198.69
Meals--Marriott--12/10/2007	1		15.67	15.67
Meals--State Museum--12/10/2007	1		7.27	7.27
Meals--Columbia Airport--12/10/2007	1		9.17	9.17
Greg Chmura's Web-based Training with Katherine DeRosear and WIN customers	9		65.00	585.00
 MAR 24 2008 TERESA CHASTEEN PRESIDENT				<input checked="" type="checkbox"/> PAID 3/25/08 CR#18168
Federal Identification Number is 54-1923150		Total	\$2,181.09	
		Payments/Credits	\$0.00	
		Balance Due	\$2,181.09	

 ENTERED

Chmura Economics & Analytics

1309 East Cary Street, Lower Level  
Richmond, VA 23219

# Invoice

Date	Invoice #
2/17/2008	1129

Bill To
WIN Teresa C. Chasteen, Ph.D., President 1000 Waterford Place Kingston, TN 37663

Description	Qty	P.O. No.	Terms	Project
			Due Upon Receipt	
SC Maintenance completed on 1/18 (moved map to front page, changed permissions needed for woke import)			275.00	275.00
FL modifications completed on 2/4 (rename mailmerge fields)			100.00	100.00
FL data fix script completed on 2/7			275.00	275.00
FL stipdent report changes completed on 2/9			1,200.00	1,200.00
FL SSN data fix script completed on 2/11			200.00	200.00
<p>South Carolina - \$275.00</p>				
<p>Florida - \$1775.00</p>				
<p><i>SJ PAID</i></p>				
		Total	\$2,050.00	
		Payments/Credits	\$0.00	
		Balance Due	\$2,050.00	

APPROVED

FEB 18 2008

TERESA CHASTEEN  
PRESIDENT

PAID  
02/19/08  
CK# 17935

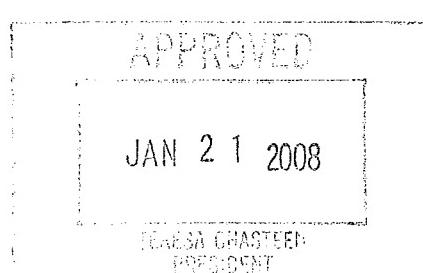
Chmura Economics & Analytics

1309 East Cary Street, Lower Level  
Richmond, VA 23219

# Invoice

Date	Invoice #
1/7/2008	1108

Bill To
WIN Teresa C. Chasteen, Ph.D., President 1000 Waterford Place Kingston, TN 37663

Description	Qty	P.O. No.	Terms	Project
		Due Upon Receipt		
Final payment of 1st year of a 3-year contract for the 'enterprise statewide agency use' for 100 seats at a price of \$139,021 per year. The 2007 payment of \$75,000 for SC Strategic Compass (JobsEQ) is applied against the total price.		64,021.00		64,021.00
				
		Total	\$64,021.00	
		Payments/Credits	\$0.00	
		Balance Due	\$64,021.00	



PAID  
01/21/08

ENTERED

CK# 17739

Chmura Economics & Analytics

1309 East Cary Street, Lower Level  
Richmond, VA 23219

# Invoice

Date	Invoice #
1/13/2008	1111

Bill To
WIN Teresa C. Chasteen, Ph.D., President 1000 Waterford Place Kingston, TN 37663

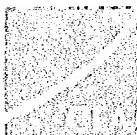
Description	Qty	P.O. No.	Terms	Project
			Due Upon Receipt	
South Carolina Data Repair Scripts	1		250.00	250.00
South Carolina Maps	1		650.00	650.00
Alabama Job Link Interface	1		1,600.00	1,600.00
Alabama Certificate Signature Update	1		100.00	100.00

*ENTERED* *PAID*  
*01-15-08*  
*CK#17710*

Federal Identification Number is 54-1923150

APPROVED	Payments/Credits	\$0.00
JAN 14 2008	Balance Due	\$2,600.00

TERESA CHASTEEN  
PRESIDENT



Chmura Economics & Analytics  
1309 East Cary Street, Lower Level  
Richmond, VA 23219

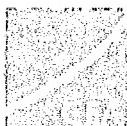
# Invoice

Date	Invoice #
12/14/2007	1105

Bill To
WIN Teresa C. Chasteen, Ph.D., President 1000 Waterford Place Kingston, TN 37663

Description	Qty	P.O. No.	Terms	Project
			Due Upon Receipt	
Modifications to the South Carolina Skills Bank	1		1,500.00	1,500.00
		APPROVED DEC 17 2007 TERESA CHASTEEN PRESIDENT		12/17/07 OK to pay K.P.
		PAID 12/19/07 CK# 17536		
Federal Identification Number is 54-1923150		Total	\$1,500.00	
		Payments/Credits	\$0.00	
		Balance Due	\$1,500.00	

100% PAID



Chmura Economics & Analytics  
1309 East Cary Street, Lower Level  
Richmond, VA 23219

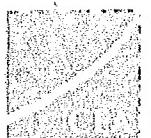
# Invoice

Date	Invoice #
12/10/2007	1103

Bill To
WIN Teresa C. Chasteen, Ph.D., President 1000 Waterford Place Kingston, TN 37663

Description	Qty	P.O. No.	Terms	Project
			Due Upon Receipt	
Enhancements to the Florida Skills Bank	1		950.00	950.00
				<i>12/17/07 OK to pay K.P.</i>
Federal Identification Number is 54-1923150			 PAID <i>12/19/07 CK# 17536</i>	
		Total	\$950.00	
		Payments/Credits	\$0.00	
		Balance Due	\$950.00	

CHMURA ECONOMICS & ANALYTICS



© Chmura Economics & Analytics

1309 East Cary Street, Lower Level  
Richmond, VA 23219

## **Invoice**

Date	Invoice #
11/21/2007	1092

**Bill To**

---

WIN  
Teresa C. Chasteen, Ph.D., President  
1000 Waterford Place  
Kingston, TN 37663

P.O. No.	Terms	Project	
Due Upon Receipt			
Description	Qty	Rate	Amount
Modifications to TN custom regions--WIN Strategic Compass Powered by JobsEQ	1	650.00	650.00
<p>SEARCHED</p> <p>INDEXED</p> <p>11/28/07</p> <p>CK 17407</p> <p>NOV 25 2007</p> <p>TERESA BRACHER</p> <p>POINTER</p> <p>SEARCHED</p> <p>INDEXED</p>			
Federal Identification Number is 54-1923150	Total	\$650.00	

Federal Identification Number is 54-1923150

**Total** \$650.00

**Payments/Credits**

## **Balance Due**

Chmura Economics & Analytics

1309 East Cary Street, Lower Level  
Richmond, VA 23219

# Invoice

Date	Invoice #
8/30/2007	1058

Bill To
WIN Teresa C. Chasteen, Ph.D., President 1000 Waterford Place Kingston, TN 37663

Description	P.O. No.	Terms	Project
		Due Upon Receipt	
Remaining balance for the WIN Strategic Compass powered by JobsEQ licenses for South Carolina	0.7	75,000.00	\$52,500.00
<i>PAID</i> <i>10/24/07</i> <i>CK. 17212</i>			
<i>NO CHARGE</i>			
Federal Identification Number is 54-1923150	<b>Total</b>	\$52,500.00	
	<b>Payments/Credits</b>	\$0.00	
	<b>Balance Due</b>	\$52,500.00	

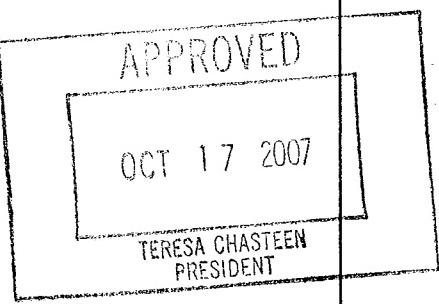
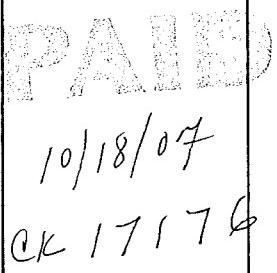


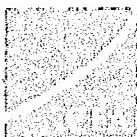
Chmura Economics & Analytics  
1309 East Cary Street, Lower Level  
Richmond, VA 23219

# Invoice

Date	Invoice #
10/16/2007	1079

Bill To
WIN Katherine DeRosear

Description	Qty	P.O. No.	Terms	Project
			Due Upon Receipt	
Final data requests supporting Georgia RFP for WIN	2		50.00	100.00
 				
Federal Identification Number is 54-1923150		<b>Total</b>	\$100.00	
		<b>Payments/Credits</b>	\$0.00	
		<b>Balance Due</b>	\$100.00	

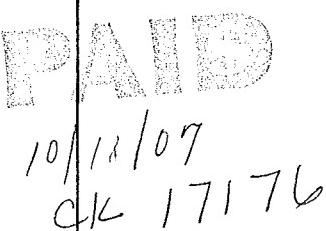
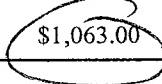


Chmura Economics & Analytics  
1309 East Cary Street, Lower Level  
Richmond, VA 23219

# Invoice

Date	Invoice #
10/16/2007	1078

Bill To
WIN Katherine DeRosear

Description	P.O. No.	Terms	Project
		Due Upon Receipt	
Qty	Rate	Amount	
Data preparation in support of Georgia RFP	21.26	50.00	1,063.00
			
Federal Identification Number is 54-1923150	<b>Total</b>	\$1,063.00	
	<b>Payments/Credits</b>	\$0.00	
	<b>Balance Due</b>	\$1,063.00	

 ENTERED

Date	Invoice #
10/8/2007	1072

Bill To
WIN Teresa C. Chasteen, Ph.D., President 1000 Waterford Place Kingston, TN 37663

Description	P.O. No.	Terms	Project
		Due Upon Receipt	
Qty	Rate	Amount	
WIB Pack for customized region in Tennessee (\$4995 paid on 9/19/07 for invoice 1058 dated 8/30/07) 3 Customized Regions	1		0.00
	3	2,000.00	6,000.00

*APPROVED  
OCT 11 2007  
TERESA CHASTEEN  
PRESIDENT*

*PAID  
10/16/07  
CK 17159*

*ENTERED*

Federal Identification Number is 54-1923150

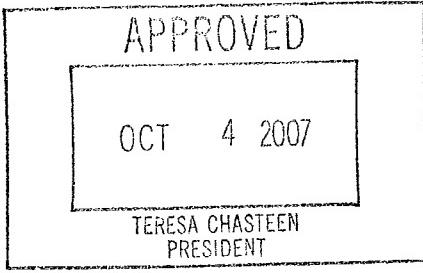
<b>Total</b>	\$6,000.00
<b>Payments/Credits</b>	\$0.00
<b>Balance Due</b>	\$6,000.00

Date	Invoice #
9/10/2007	1061

**Bill To**

WIN  
 Teresa C. Chasteen, Ph.D., President  
 1000 Waterford Place  
 Kingston, TN 37663

P.O. No.	Terms	Project
	Due Upon Receipt	

Description	Qty	Rate	Amount
South Carolina CRC Delivered 8/24/07 Florida Workkeys Import Feature Delivered 8/31/07		7,500.00 900.00	7,500.00 900.00
			

Federal Identification Number is 54-1923150

<b>Total</b>	\$8,400.00
--------------	------------

<b>Payments/Credits</b>	\$0.00
-------------------------	--------

<b>Balance Due</b>	\$8,400.00
--------------------	------------

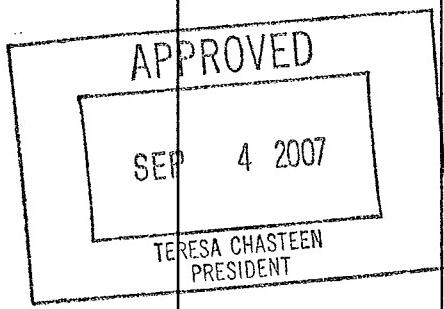
1309 East Cary Street, Lower Level  
Richmond, VA 23219

Date	Invoice #
8/30/2007	1059

Bill To
WIN Teresa C. Chasteen, Ph.D., President 1000 Waterford Place Kingston, TN 37663

P.O. No.	Terms	Project
	Due Upon Receipt	

Description	Qty	Rate	Amount
Demonstration Discounted Price for TN WIA 4	1	4,995.00	4,995.00



**PAID**  
**CK 16927**  
**9/14/07**

*RECEIVED*

Federal Identification Number is 54-1923150	Total	\$4,995.00
	Payments/Credits	\$0.00
	<b>Balance Due</b>	\$4,995.00

Date	Invoice #
8/6/2007	1054

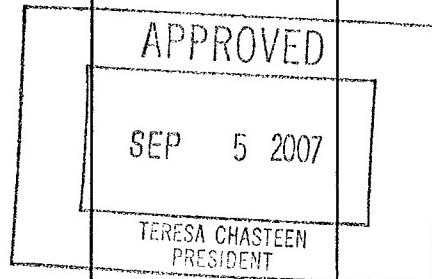
<b>Bill To</b>
WIN Teresa C. Chasteen, Ph.D., President 1000 Waterford Place Kingston, TN 37663

PAID  
RECEIVED  
9/6/07

9/6/07 CK 16897

P.O. No.	Terms	Project
	Due Upon Receipt	

Description	Qty	Rate	Amount
Development and deployment of the Florida CRC database	1	9,000.00	9,000.00
Federal Identification Number is 54-1923150			



Per Kali Phillips

<b>Total</b>	\$9,000.00
<b>Payments/Credits</b>	\$0.00
<b>Balance Due</b>	\$9,000.00

*Kali Phillips*

Date	Invoice #
7/12/2007	1050

Bill To
WIN Teresa C. Chasteen, Ph.D., President 1000 Waterford Place Kingston, TN 37663

Description	Qty	P.O. No.	Terms	Project
			Due Upon Receipt	
Strategic Compass Training in Columbia SC: Chris Reimbursement for travel costs (777 miles + hotel + meal); receipts under separate cover			1,200.00 520.61	1,200.00 520.61

PAID

7/9/07

\$1720.61

16604

	Total	\$1,720.61
	Payments/Credits	\$0.00
	Balance Due	\$1,720.61

ENTERED

Sunoco #2625

McDonald's Corporation  
Thank you for eating at McDonald's  
5028 HWY 264 WEST  
WILSON, NC 27893

SUNOCO 2625  
US-70 & I-95 EXIT 95  
SMITHFIELD, NC 27577  
Merchant#: H337419419001

07/10/07 17:25:02

THANK YOU

MCDONALD'S TEL# (252)246-0287  
38 KS#03 S#1 Jul.09'07(Mon)17:12  
STORE# 20917 MER# KB37466533001

PC DT MT DEW	1.39T
FL HONEY ROA	0.50T
FL OBERTO TE	5.99T
<b>Subtotal</b>	<b>7.88</b>
NC 6.75%	0.53
<b>Total</b>	<b>\$8.41</b>
Credit Card(USD\$)	\$8.41

## Order #338 TO GO

1 CHICKEN CLUB-GRL	3.80
1 W/O	
1 MED DIET COKE	1.30
 SUB TOTAL	5.10
TAKE OUT TAX	0.34
 -----	
	5.44

**Change** \$0.00

XXXXXXXXXXXX2009  
AMX  
Trans# 070413 Approval# 550780  
Card Total: \$8.41

\*\*\* Customer signature on file \*\*\*

Trans ID# 244083  
e8s121t4

CARD ISSUER ACCOUNT #  
AMEX SALE \*\*\*\*\*2009  
TRANSACTION AMOUNT 5.44  
AUTH CODE 538318 SEQ# 6803

Thank you for  
SHOPPING Sunoco

CASH TENDERED	0.00
CHANGE	0.00



**WINGATE INN**  
8300 TWO NOTCH ROAD

Jul 10, 2007  
1:32 am

COLUMBIA, SC 29223

Phone: (803)699-9333 Fax: (803)699-6588

CHRIS CHMURA  
1309 E CHERY ST  
Richmond, VA 23219

Account #: 59801  
Room Number: 320  
Rate: \$117.04  
Pay Method: XXXXXXXXXXXX2009 AX

Arrival Date: Monday, July 09, 2007  
Departure Date: Tuesday, July 10, 2007

Member #:

Information: ADV 4P CXL/FULL READBACK

Date	Department	Reference	Voucher	Room	Debit	Credit
07/09/07	Room postings	Auto Posted		320	\$117.04	
07/09/07	STATE TAX	Auto Posted		320	\$7.02	
07/09/07	CITY TAX	Auto Posted		320	\$2.34	
07/09/07	DEVELOPMENT/TOL	Auto Posted		320	\$3.51	
07/10/07	AMERICAN EXPRES			320		\$129.91

As a TripRewards member, you could have earned 1,170 points for this stay.  
To become a member visit us at [triprewards.com](http://triprewards.com) or call 1-800-FOR-TRIP.

Tax Summary	
STATE TAX	\$7.02
CITY TAX	\$2.34
DEVELOPMENT	\$3.51

Balance:  \$0.00

I agree that my liability for all charges is not waived. This property is independently owned and operated under license from Wingate Inn. Contact the Front Desk Manager about any billing issues.

Notice: This property maintains a NO PETS policy, with the exception of service animals.

Signature \_\_\_\_\_

Please contact the Manager about any issues with your stay.  
Wingate Inn or affiliates may contact you about goods and services unless you call 877-333-6683 or write to Box 27970, Minneapolis, MN 55427-0970 to opt out.  
View our Wingate Inn website about privacy.

Date	Invoice #
7/4/2007	1046

Bill To
WIN Teresa C. Chasteen, Ph.D., President 1000 Waterford Place Kingston, TN 37663

Description	P.O. No.	Terms	Project
	Due Upon Receipt		
Description	Qty	Rate	Amount
Modifications to the Alabama CRC database	1	800.00	800.00
<i>PAID 7/12/07 CC # 16562 ENTERED</i>			
Federal Identification Number is 54-1923150	Total	\$800.00	
	Payments/Credits	\$0.00	
	Balance Due	\$800.00	

Date	Invoice #
6/17/2007	1037

Bill To
WIN Teresa C. Chasteen, Ph.D., President 1000 Waterford Place Kingston, TN 37663

	P.O. No.	Terms	Project
		Due Upon Receipt	
Description	Qty	Rate	Amount
JobsEQ demos in Montgomery, AL; Columbia, SC; and Auburn, AL (June 12 - 14, 2007) Travel reimbursements for hotel, transportation, and food (scanned invoices sent as separate e-mail)	3	800.00	2,400.00
		1,254.48	1,254.48
<i>PAID 6/29/07 CK # 16495</i>			
	<i>APPROVED</i> <i>JUN 16 2007</i> <i>TERESA CHASTEEN PRESIDENT</i>		
<i>CHMURA ECONOMICS &amp; ANALYTICS</i>			
	<b>Total</b>		\$3,654.48
	<b>Payments/Credits</b>		\$0.00
	<b>Balance Due</b>		\$3,654.48

### June 2007 Alabama Travel Expenses - Greg

Item	Amount	Total
Flight - Continental	\$ 312.80	✓
Car rental - Hertz	\$ 388.88	✓
Gas - Shell	\$ 30.55	✓
Transportation - Total	\$ 732.23	
Hilton Mobile (2 days)	\$ 371.76	✓
Holiday Inn Auburn	\$ 101.70	✓
Lodging - Total	\$ 473.46	
Starbucks	\$ 1.70	✓
McDonalds	\$ 1.29	✓
McAlisters (6/11)	\$ 11.31	✓
McAlisters (6/12)	\$ 10.74	✓
Ruby Tuesday	\$ 19.69	✓
Burger King	\$ 4.06	✓
Food - Total	<u>\$ 48.79</u>	✓
GRAND TOTAL	<u>\$ 1,254.48</u>	✓

June  
 103 X

*Greg Chmura*

**From:** Continental Airlines, Inc. [continentalairlines@continental.com]  
**Sent:** Thursday, May 24, 2007 11:58 AM  
**To:** GREG.CHMURA@CHMURAECON.COM  
**Subject:** eTicket Itinerary and Receipt for Confirmation AQJ6ZK

To ensure delivery of this e-mail please add [continentalairlines@continental.com](mailto:continentalairlines@continental.com) to your address book or approved senders list. See [instructions](#) for adding us to your address book.



Issue Date: May 24, 2007

**Traveler** eTicket Number **Frequent Flyer Seats**  
CHMURA/GREGMR0052188056724 CO-FB734604 16A/15B

#### FLIGHT INFORMATION

Day, Date	Flight Class	Departure City and Time	Arrival City and Time	Aircraft	Meal
Mon, 11 JUN 07	2593 N	CLEVELAND (CLE) 9:05AM	NEW ORLEANS (MSY) 10:37AM	ERJ-145	

Thu, 14 JUN 07	2590 W	ATLANTA (ATL) 6:00PM	CLEVELAND (CLE) 8:00PM	ERJ-145
----------------	--------	-------------------------	---------------------------	---------

•Operated by EXPRESSJET AIRLINES INC doing business as CONTINENTAL EXPRESS  
•Operated by EXPRESSJET AIRLINES INC doing business as CONTINENTAL EXPRESS

#### FARE INFORMATION

##### Fare Breakdown

Airfare:	271.63USD	<b>Form of Payment:</b>
Tax:	20.37	DISCOVER
U.S. Flight Segment Tax:	6.80	Last Four Digits 5261
U.S. Security Service Fee:	5.00	
U.S. Passenger Facility Charge:	9.00	
Per Person Total:	312.80USD	

**eTicket Total:** 312.80USD

The airfare you paid on this itinerary totals: 271.63 USD

**The taxes you paid on this itinerary total: 41.17 USD**

Fare Rules: Additional charges may apply for changes in addition to any fare rules listed.

NONREF/0VALUAFDPT/CHGFE

Cancel reservations before the scheduled departure time or TICKET HAS NO VALUE.

#### eTicket Travel Reminders

- **Check-in Requirement** - Bags must be checked and boarding passes obtained at least 30 minutes prior to scheduled departure. Baggage will not be accepted and advance seat assignments may be canceled if this condition is not met.
- **Boarding Requirement** - Passengers must be prepared to board at the departure gate with their boarding pass at least 15 minutes prior to scheduled departure.
- Failure to meet the **Boarding Requirements** may result in cancellation of reservations, denied boarding, removal of checked baggage from the aircraft and loss of eligibility for denied boarding compensation.
- Bring your boarding pass or this eTicket Receipt along with photo identification to the airport.
- The FAA now restricts carry-on baggage to one bag plus one personal item (purse, briefcase, laptop computer, etc.) per passenger.

ATLANTA-HARTSFIELD INT'L

RR 599721135

#01

GREG  
CHMURA

HERTZ

VEHICLE: 01998 / 1163468  
07SNFE LIC: NJ VNC24E

HERTZ

CDP: 00099  
FF: COFB734604  
RES: D6724723221 / ICAL / C  
COMPLETED BY: 6463 / GAATL11  
RENTED: NEW ORLEANS INT'L A/P  
RENTAL: 06/11/07 10:47  
RETURN: 06/14/07 12:28

HERTZ

PLAN IN: ICAL RATE CLASS: C

HERTZ

PLAN OUT: ICAL

MILES IN: 10148 TR-X MILES  
MILES OUT: 9621 MILES ALLOWED  
MILES DRIVEN: 527 MILES CHARGED

HERTZ

DAYS	3 @ \$ 74.99 / DAY	\$ 224.97
EX HOURS	1 @ \$ 37.23 / HOUR	\$ 37.23
SUBTOTAL	T\$	262.20
CONCESSION FEE RECOVERY	T\$	29.10
FF SURCHARGE	T\$	1.50
LDW	DECLINED	
LIS	DECLINED	
PAI, PEC	DECLINED	
FPO ACCEPTED	\$	55.82
TAX 13.750% ON	\$	40.26
NET DUE	\$	388.88

HERTZ

PAID BY DISC XXXXXXXXXXXX5261

FF: CO FB734604 - 150 MILES  
AWARDED

HERTZ

HOW WAS YOUR EXPERIENCE?  
WE'D LIKE YOUR FEEDBACK.

HERTZ

- 1) Call 1-800-278-1595, or  
Visit [WWW.HERTSURVEY.COM](http://WWW.HERTSURVEY.COM)
- 2) Enter Access Code: 01640
- 3) Take Brief 4 Question Survey

HERTZ

THANK YOU FOR RENTING FROM

HERTZ

HERTZ

Name &amp; Address

CHMURA, GREG  
322 Evelyn Avenue

Seven Hills, OH 44131  
US

CHMURA ECONOMICS AND ANALYTICS

Room 315/Q2  
Arrival Date 06/11/07 2:52PM  
Departure Date 06/13/07

Adult/Child 1/0  
Room Rate 160.55

RATE PLAN L-AA

HH#  
AL:  
BONUS AL: CAR:

Confirmation Number : 3284341918

06/13/07 PAGE 1

DATE	DESCRIPTION	ID	REF. NO.	CHARGES	CREDITS	BALANCE
06/11/07	GUEST ROOM	CPA	378644	\$160.55		
06/11/07	STATE TAX	CPA	378644	\$6.42		
06/11/07	CITY TAX	CPA	378644	\$6.42		
06/12/07	*GREAT AMER GRILL	KWP	378700	\$9.71		
06/12/07	*RUBY TUESDAY DELIVERY	MMA	378873	\$15.27		
06/12/07	GUEST ROOM	CPA	379032	\$160.55		
06/12/07	STATE TAX	CPA	379032	\$6.42		
06/12/07	CITY TAX	CPA	379032	\$6.42		
	WILL BE SETTLED TO DS *5261					\$371.76
	EFFECTIVE BALANCE OF					\$0.00

### Zip-Out Check-Out®

Good Morning ! We hope you enjoyed your stay. With Zip-Out Check-Out® there is no need to stop at the Front Desk to check out.

- Please review this statement. It is a record of your charges as of late last evening.
  - For any charges after your account was prepared, you may:
    - + pay at the time of purchase.
    - + charge purchases to your account, then stop by the Front Desk for an updated statement.
    - + request an updated statement be mailed to you within two business days.
- Simply call the Front Desk from your room and tell us when you are ready to depart. Your account will be automatically checked out and you may use this statement as your receipt. Feel free to leave your key(s) in the room.
- Please call the Front Desk if you wish to extend your stay or if you have any questions about your account.

DATE OF CHARGE	FOLIO NO./CHECK NO. 88796 A
AUTHORIZATION	INITIAL
PURCHASES & SERVICES	
TAXES	
TIPS & MISC.	
TOTAL AMOUNT	

T

H

A

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K

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Greg Chmura  
322 Evelyn Avenue  
Seven Hills Oh 44131 United, States

A/R Number

Credit Card

Room No. 227  
Arrival 06-13-07  
Departure 06-14-07

1 of 1

Customer No.

44

Guest Name

PG

www.6c.com

Date		Charges	Credits
06-13-07	*Accommodation	90.00	
06-13-07	Lodging Tax	11.70	
	Total	101.70	0.00
	Balance	101.70	

Guest Signature: \_\_\_\_\_

I have received the goods and / or services in the amount shown in the above statement and agree that this bill is not waived and agree to be held personally liable in the event that the indicated person, company, or association fails to pay for the payment of the full amount of these charges. If a credit card charge, I further agree to perform the obligations set forth in the cardholder's agreement with the issuer.

Address: Express Inn & Suites

201 South College St.

Seven Hills, OH 44131

Telephone: (330) 562-0001 (330) 562-7090

STARBUCKS "D"  
HOPKINS INT'L AIRPORT

Thank You For Eating At  
MCDONALDS 11322  
370 VOTERS RD HEY & I10 HWY 433  
SLIDELL, LA 70461

! ! THANK YOU ! !

TEL# 9856496077 Store# 11322

KS#2 Jun.11'07 (Mon) 12:28

MFY side 1 KVS order 400

QTY ITEM	TOTAL
1 CHEESEBURGER	1.29
1 SML WATER	0.00
<b>Subtotal</b>	<b>1.29</b>
Tax	0.11
<b>Take-Out Total</b>	<b>1.40</b>
Cash Tendered	2.00
Change	0.60

1 TAL COD T	1.70
<b>Subtotal</b>	<b>1.70</b>
Amt Paid	1 . 7 0
Cash	20.00
Change Due	18.30

Questions or Comments?  
Please contact us @  
paul.harris@hmshost.com

MCALISTERS DELI  
DAPHNE, AL  
6882 US HWY 90 STE. 1  
DAPHNE, AL 36526  
(251) 621-7179

EMP: MERCEDES N  
Date 06/11/07  
Table 85  
154268

DISCOVER  
Time 16:35

Card Holder CHMURA/GREGORY JOSEPH  
Card Number xxxxxxxxx1526| xx/xx  
Auth-Code.. 011055 Ctrl: 13647

Amount... 29.31  
Tip... 2.00  
Total... 31.31

X Cardmember agrees to pay total in  
accordance with agreement governing  
use of such card.

\*\*\* Customer Copy \*\*\*

MCALISTERS DELI  
DAPHNE, AL  
6882 US HWY 90 STE. 1  
DAPHNE, AL 36526  
(251) 621-7179

354329  
ANGELA W Table 210  
Tue 06/12/07 11:14 AM Guests 6

---

1 GCB	6.59
1 SIDE SALAD	1.49
1 REGULAR HOUSE	0.00
1 POTATO SALAD	0.89
1 WITH MEAL	0.00
1 CC. COOKIE	1.00
SubTotal	9.89
Taxes...	0.85

Total 10.74

DISCOVER Amount Applied 10.74

DISCOVER Tendered 10.74

\*\*\*\*\*  
\*\*\* Thanks for Choosing \*\*\*  
\*\*\* McAlister's Deli \*\*\*  
\*\*\* \*\*\*  
\*\*\* Call us for all of your \*\*\*  
\*\*\* catering needs \*\*\*  
\*\*\* HAVE A GREAT DAY!!! \*\*\*  
\*\*\*\*\*

RUBY TUESDAY

RT4619

Credit Card Voucher

Date: Jun13'07 08:36PM  
Card Type: Discover  
Acct #: XXXXXXXXXX5261  
Exp Date: XX/XX  
Auth Code: 013988  
Check: 3794  
Table: 604/1  
Server: 675 Christin  
GREGORY JOSEPH CHMURA

WELCOME

50 128 600017  
SHELL  
I-65 & HWY 83  
EVERGREEN AL  
36401

Subtotal: 16.39

INVOICE # 075366  
DATE 06/13/07 05:44  
AUTH # 013929

Gratuity: 3.30

DISCOVER  
ACCOUNT NUMBER  
XXXX XXXX XXXX 5261

Total: 19.69 ✓

PUMP PRODUCT \$/G  
04 REG \$3.019  
GALLONS FUEL TOTAL  
10.118 \$30.55 ✓

Signature

Signature

Signature

HMSHost BURGER KING Store #9702  
BURGER KING/CINNABON DF-8  
ATLANTA HARTSFIELD INT'L AIRPORT  
12985 LATIA

CHK 2623 JUN14'07 1:47PM

1 TEND CRISPY SAND 3.79

SUBTOTAL	3.79
TAX	0.27
AMOUNT PAID	4.06
CASH	20.06
CHANGE DUE	16.00

ATLANTA HARTSFIELD INT'L AIRPORT

If we did exceed your  
expectations or if we did not  
exceed your expectations, we  
would love to hear from you

(404) 838 1028

tim.slaney@hmshost.com

Your order number is: 2623

Date	Invoice #
6/17/2007	1036a

**Bill To**

WIN  
 Teresa C. Chasteen, Ph.D., President  
 1000 Waterford Place  
 Kingston, TN 37663

P.O. No.	Terms	Project
	Due Upon Receipt	

Description	Qty	Rate	Amount
Columbia, SC, presentation on June 5, 2007: Chris Chmura Reimbursement for mileage (795 miles at \$0.485 per mile) Reimbursement for Food (scanned invoices sent as separate e-mail) Reimbursement for Parking	795	1,200.00 0.485 12.01 4.00	1,200.00 385.58 12.01 4.00

**PAID**  
 6/26/07  
 CK 10470

**APPROVED**  
 JUN 16 2007  
 TERESA CHASTEEN  
 PRESIDENT

**ENTERED**

	<b>Total</b>	\$1,601.59
	<b>Payments/Credits</b>	\$0.00
	<b>Balance Due</b>	\$1,601.59



Date	Invoice #
5/28/2007	1029a

Bill To
WIN Teresa C. Chasteen, Ph.D., President 1000 Waterford Place Kingston, TN 37663

Description	P.O. No.	Terms	Project
	Due Upon Receipt		
Columbia, SC, presentation on May 14, 2007: Chris Chmura		Qty	Rate
Columbia, SC, presentation on May 14, 2007: Leslie Peterson			1,200.00
Reimbursement for Mileage (795 miles at \$0.485 per mile)		795	1,000.00
Reimbursement for Hotel and Food (scanned invoices sent as separate e-mail)			0.485
			385.58
			153.82
			153.82
<b>PAID</b> CK # 16335 6/5/07			
APPROVED MAY 29 2007 TERESA CHASTEEN PRESIDENT			
		<b>Total</b>	\$2,739.40
		<b>Payments/Credits</b>	\$0.00
		<b>Balance Due</b>	\$2,739.40

0 PAYMENT



WINGATE INN  
8300 TWO NOTCH ROAD

May 26, 2007  
8:16 pm

COLUMBIA, SC 29223  
Phone: (803)699-9333 Fax: (803)699-6588

CHRIS CHMURA  
1309 E CHERY ST  
Richmond, VA 23219

Arrival Date: Sunday, May 13, 2007  
Departure Date: Monday, May 14, 2007

Member #:

Information

Date	Department	Reference	Voucher	Room	Debit	Credit
05/13/07	Room postings	Auto Posted		223	\$113.52	
05/13/07	STATE TAX	Auto Posted		223	36.81	
05/13/07	CITY TAX	Auto Posted		223	32.27	
05/13/07	DEVELOPMENT/TOU	Auto Posted		223	3.41	
05/14/07	AMERICAN EXPRES			223		\$126.01

As a TripRewards member, you could have earned 1,135 points for this stay.  
To become a member visit us at [triprewards.com](http://triprewards.com) or call 1-800-FOR-TRIP.

Tax Summary	
STATE TAX	\$6.81
CITY TAX	\$2.27
DEVELOPMENT	\$3.41

Balance \$0.00

I agree that my liability for all charges is not waived. This property is independently owned and operated under license from Wingate Inn. Contact the Front Desk Manager about any billing issues.

Note: This property maintains a NO PETS policy, with the exception of service animals.

Signature \_\_\_\_\_

Please contact the Manager about any issues with your stay.  
Wingate Inn or affiliates may contact you about goods and services unless you call 877-333-6683 or write to Box 27970, Minneapolis, MN 55427-0970 to opt out.  
View our Wingate Inn website about privacy



Argy's  
1050 Hackstop Rd.  
Santa Fe, NM 87542

0165 9617 1 )  
CAMERON B. SOUTHERN 5000.00 14/07  
DT PAYMENT STATION

	Mean	SD	n	%
總分	2.08	4.55	2.89	
聽力	1.46	3.47	1.46	
視力	0.75	2.05	0.75	
運動	0.46	1.46	0.46	

2014-09-01 AT : 11:17

ZAXBY'S MISSION STATEMENT  
"CONSISTENTLY CREATE ENCORE EXPERIENCES THAT ENRICH LIVES ONE PERSON AT A TIME!"

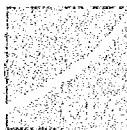
卷之三

NAME	ADDRESS	TELEGRAM	TELEGRAPHIC ADDRESS
WILLIAM H. DAVIS	111 E. 125TH ST.	WHD	WHD
JOHN W. DAVIS	111 E. 125TH ST.	JWD	JWD
JOHN W. DAVIS	111 E. 125TH ST.	JWD	JWD
JOHN W. DAVIS	111 E. 125TH ST.	JWD	JWD

$d_{\text{min}} = \frac{1}{2} \left( \frac{1}{\sqrt{2}} + \frac{1}{\sqrt{2}} \right) = \frac{\sqrt{2}}{2}$ . Since  $\sqrt{2} > 1$ ,  $d_{\text{min}} < 1$ .

卷之三

中華書局影印  
新編全蜀王  
明史稿  
卷一百一十一  
列傳一百四十一



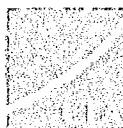
Chmura Economics &amp; Analytics

1309 East Cary Street, Lower Level  
Richmond, VA 23219**Invoice**

Date	Invoice #
5/2/2007	1022

Bill To
WIN Teresa C. Chasteen, Ph.D., President 1000 Waterford Place Kingston, TN 37663

Description	Qty	P.O. No.	Terms	Project
			Due Upon Receipt	
Retainer for JobsEQ South Carolina Adding CRC functionality to JobsEQ for WIN in South Carolina	0.3 1		75,000.00 8,500.00	22,500.00 8,500.00
<i>Paid 5/21/07 CK 16251 S. MURRAY</i>		<i>APPROVED MAY 21 2007 TERESA CHASEEN PRESIDENT</i>		
UPS - overnight				
Federal Identification Number is 54-1923150			<b>Total</b>	\$31,000.00
			<b>Payments/Credits</b>	\$0.00
			<b>Balance Due</b>	\$31,000.00

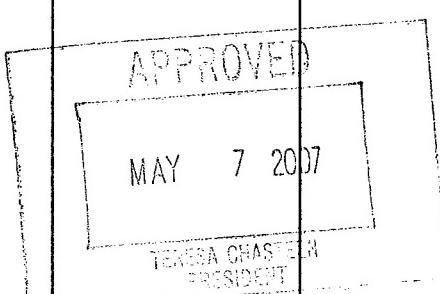


Chmura Economics & Analytics  
1309 East Cary Street, Lower Level  
Richmond, VA 23219

# Invoice

Date	Invoice #
5/2/2007	1021

Bill To
WIN Teresa C. Chasteen, Ph.D., President 1000 Waterford Place Kingston, TN 37663

Description	Qty	P.O. No.	Terms	Project
			Due Upon Receipt	
Remaining balance for JobsEQ Alabama	1		7,500.00	7,500.00
				
Federal Identification Number is 54-1923150		Total	\$7,500.00	
		Payments/Credits	\$0.00	
		Balance Due	\$7,500.00	

03 PRINTED

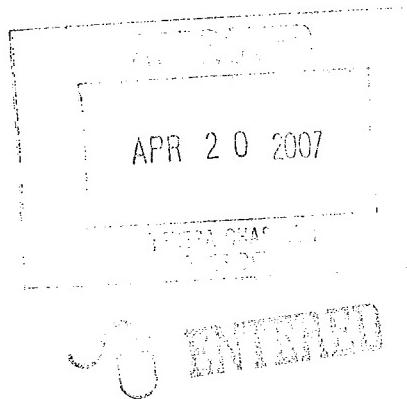
Date	Invoice #
4/19/2007	1015

**Bill To**

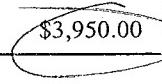
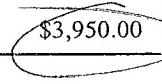
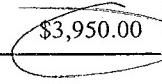
WIN

Teresa C. Chasteen, Ph.D., President  
 1000 Waterford Place  
 Kingston, TN 37663

P.O. No.	Terms	Project
	Due Upon Receipt	

Description	Qty	Rate	Amount
CRC database development for Georgia Reimbursement for Dundas License		1,700.00 2,250.00	1,700.00 2,250.00
 			

All work is complete!

**Total** \$3,950.00
 
**Payments/Credits** \$0.00
 
**Balance Due** \$3,950.00
 

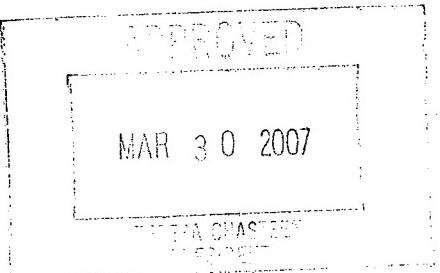
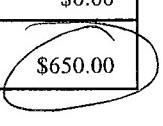


Chmura Economics & Analytics  
1309 East Cary Street, Lower Level  
Richmond, VA 23219

# Invoice

Date	Invoice #
3/30/2007	1002

Bill To
WIN Teresa C. Chasteen, Ph.D., President 1000 Waterford Place Kingston, TN 37663

Description	Qty	P.O. No.	Terms	Project
		Due Upon Receipt		
CRC database creation for Florida Strategic Compass			650.00	650.00
 PAID 4-4-07 CK 15974				
		Total	\$650.00	
		Payments/Credits	\$0.00	
		Balance Due	\$650.00	

 ENTERED

Date	Invoice #
2/9/2007	990A

**Bill To**

WIN  
 Teresa C. Chasteen, Ph.D., President  
 1000 Waterford Place  
 Kingston, TN 37663

Description	P.O. No.	Terms	Project
		Due Upon Receipt	
Chris Chmura presentation to Auburn-Opelika workforce development task force	1	1,200.00	1,200.00
Airfare for Chris Chmura from Richmond, VA to Montgomery, AL	1	331.61	331.61
Rental car (2 days)	2	28.98	57.96
		0.00	0.00
Chris Chmura presentation to Mobile workforce development task force	1	1,200.00	1,200.00
Airfare for C. Chmura from Richmond, VA to Mobile, AL	1	517.10	517.10
Cab from airport to hotel	1	30.00	30.00
Riverview Plaza Hotel	1	79.25	79.25



PAID  
2/15/07  
Ac # 15735

Federal Identification Number is 54-1923150

<b>Total</b>	\$3,415.92
<b>Payments/Credits</b>	\$0.00
<b>Balance Due</b>	\$3,415.92

*SG ENTRPRISES*

Mobile, AL

**Booked items**

We're sorry, this booking did not qualify for ThankYou<sup>SM</sup> Points. [Why not?](#)  
Learn more about how to earn points for future bookings.

**Flight: Richmond to Mobile**[back to top](#)

Expedia.com itinerary number: **118615657716**  
Airline ticket number(s): 0067812913144  
Delta confirmation code: CQQ6FB

Main contact: Christine Chmura  
E-mail: chris@chmuraecon.com  
Home phone: (804) 337-0072

**Traveler and cost summary**

Christine Chmura	Adult	Delta #4006105769 <a href="#">Update Frequent Flyer number(s)</a>	\$439.06
		Taxes & Fees	\$73.04
		Booking Fee	\$5.00
		Total (American Express)	\$517.10

[Change this flight](#) [Print a receipt](#) [View cancellation information](#)

**Flight summary**

To verify flight information, you can check your flight status and departure gate online, or contact the airline directly. Seat assignments, meal preferences, and special requests must be confirmed with the airline; we cannot guarantee that they will be honored.

**Wed 7-Feb-07**

Richmond (RIC) Depart 12:25 pm	to Atlanta (ATL) Arrive 2:23 pm	481 mi (774 km) Duration: 1hr 58mn	 Flight: 5193 Operated by: COMAIR INC
-----------------------------------	------------------------------------	--	---

**Economy/Coach Class ( 10A ), Canadair RJ**

Please check in with Comair. If checking in at a kiosk, use your name rather than confirmation number.

Atlanta (ATL) Depart 3:15 pm	to Mobile (MOB) Arrive 3:30 pm	302 mi (486 km) Duration: 1hr 15mn	 Flight: 4396 Operated by: ATLANTIC SOUTHEAST
---------------------------------	-----------------------------------	--	---

**Economy/Coach Class ( 12A ), Canadair RJ**

Total distance: 783 mi (1,260 km) Total duration: 3hr 13mn (4hr 5mn with connections)

**Thu 8-Feb-07**

Mobile (MOB) Depart 3:55 pm	to Atlanta (ATL) Arrive 6:08 pm	302 mi (486 km) Duration: 1hr 13mn	 Flight: 4564 Operated by: ATLANTIC SOUTHEAST
--------------------------------	------------------------------------	--	---

**Economy/Coach Class ( 12A ), Canadair RJ**

Please check in with Atlantic Southeast. If checking in at a kiosk, use your name rather than confirmation number.

## RIVERVIEW PLAZA HOTEL

## GUEST FOLIO

1420 CHMURA/CHRIS  
ROOM NAME  
CNKG  
TYPE  
30 401 ADMS AVE  
ROOM CLERK MONTGOMERY AL 36103

RATE	02/08/07	12:00	3620
DEPART	02/07/07	16:57	ACCT#
ARRIVE			

DATE	REFERENCE	TELECOM	CHARGES	CREDITS	MR#:	BALANCE DUE
					PAYMENT	
02/07	TELECOMM	TELECOM	9.95			
02/07	TAX	1420, 1	.90			
02/07	ROOM	1420, 1	60.00			
02/07	RM TAX		8.40			
02/08	AX CARD				\$79.25	

TO BE SETTLED TO: AMERICAN EXPRESS CURRENT BALANCE .00

Livery Cab Co.  
Cell (251) 454-7502  
Office (251) 776-7474

From: Mobile Airport  
To: Riverview Plaza  
Date: 2-07-07  
AMT: \$ 30

RIVERVIEW PLAZA HOTEL  
64 SOUTH WATER STREET  
MOBILE, AL 36602  
PH# 251-438-4000 FAX# 251-415-0123

This statement is your only receipt. You have agreed to pay in cash or by approved personal check or to authorize us to charge your credit card for all amounts charged to you. The amount shown in the credits column opposite any credit card entry in the reference column above will be charged to the credit card number set forth above. (The credit card company will bill in the usual manner.) If for any reason the credit card company does not make payment on this account, you will owe us such amount. If you are direct billed, in the event payment is not made within 25 days after check-out, you will owe us interest from the check-out date on any unpaid amount at the rate of 1.5% per month (ANNUAL RATE 18%), or the maximum allowed by law, plus the reasonable cost of collection, including attorney fees.

Signature X \_\_\_\_\_

**Montgomery, AL****Booked items**

We're sorry, this booking did not qualify for ThankYou<sup>SM</sup> Points. [Why not?](#)  
[Learn more about how to earn points for future bookings.](#)

**Flight: Richmond to Montgomery**[back to top](#)

Expedia.com itinerary number: 118362979410  
 Airline ticket number(s): 0377806367924-926  
 US Airways confirmation code: LVXGEX

**Main contact:** Christine Chmura  
 E-mail: chris.chmura@chmuraecon.com  
 Home phone: (804) 337-0072  
 Work phone: (804) 643-3640

One or more of the frequent flyer account numbers you entered were not recognized. To ensure that you receive proper credit, please update your frequent flyer number by clicking the link below.

**Traveler and cost summary**

Christine Chmura	Adult	Delta #4006105769	\$267.91
leslie peterson	Adult	<a href="#">Update Frequent Flyer number(s)</a>	\$267.91
		<a href="#">Add Frequent Flyer number(s)</a>	
		Taxes & Fees	\$117.40
		Booking Fee	\$10.00
		Total (American Express)	<b>\$663.22</b>

[Change this flight](#) [Request seat changes](#) [Print a receipt](#) [View cancellation information](#)

**Flight summary**

To verify flight information, you can check your flight status and departure gate online, or contact [the airline](#) directly. Seat assignments, meal preferences, and special requests must be confirmed with the airline; we cannot guarantee that they will be honored.

**Mon 22-Jan-07**

Richmond (RIC)	to	Charlotte (CLT)	257 mi	
Depart 12:00 pm		Arrive 1:07 pm	(414 km)	Flight: 2303
			Duration: 1hr 7mn	Operated by: US AIRWAYS EXPRESS-PSA AIRLINES

[Economy/Coach Class \( Seat assignments upon check-in \)](#) [More Information](#), Canadair RJ

Charlotte (CLT)	to	Montgomery (MGM)	374 mi	
Depart 3:39 pm		Arrive 3:59 pm	(602 km)	Flight: 2393
			Duration: 1hr 20mn	Operated by: US AIRWAYS EXPRESS-PSA AIRLINES

[Economy/Coach Class \( 07F, 07D \)](#), Canadair RJ

Total distance: 631 mi (1,015 km) Total duration: 2hr 27mn (4hr 59mn with connections)

**Wed 24-Jan-07**

Montgomery (MGM)	to	Charlotte (CLT)	374 mi	
			(602 km)	

**Enterprise**OWNER OF VEHICLE:  
BRANCH ADDRESS:ENTERPRISE LEASING COMPANY - SOUTH CENTRAL, INC.  
3470 SELMA HWY  
MONTGOMERY

334-834-7504

AL 36109-4970

MON 6 JA 9:00P TU 8:00A- 9:00P  
WED 8:00A- 9:00P TH 8:00A- 9:00P  
FR 8:00A- 9:00P SA 8:00A- 9:00P

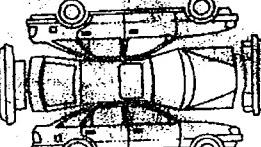
574

D

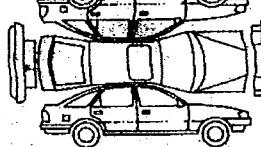
714514

RENTAL  
TYPE R  
REFRESHMENT CHRISTMAS  
0423 PM 1/22/07  
RATES CHARGED IF DIFFERENT

## ORIGINAL VEHICLE

COLOR	LICENSE NO.	
LBTY	BOSS	
MILE-AGE	IN 13962 OUT 13815	
DRIVEN	W	
CONDITION AGREED TO: X RENTER FROM DAMAGE		
		
X = DENT	-- SCRATCH	○ = MISSING
OUT E 1/8 1/4 3/8 1/2 5/8 3/4 7/8 F	No Gasoline Refund	
F 1/8 1/4 3/8 1/2 5/8 3/4 7/8 E		

BILL TO  COMPANY N  
ATTN: REFERENCE NUMBER:  
ADDITIONAL AUTHORIZED DRIVER(S) - EXCEPT AS RECORDED BY DAY, NONE PERMITTED WITHOUT OWNER'S WRITTEN APPROVAL  
PERMITTED DRIVERS: ELAINE #  
I HAVE READ MY CONTRACT AND SECTION 10 WHICH RELATES TO DRIVING VEHICLE FOR ME AND ON MY BEHALF. I AM ADDING ANOTHER PERSON TO DRIVE VEHICLE THAT ARE OWNED AND FOR FULFILLING TERMS AND CONDITIONS OF THIS RENTAL AGREEMENT. DRIVING A RENTED VEHICLE BY AN UNAUTHORIZED DRIVER WILL AFFECT MY LIABILITY AND RIGHTS UNDER THIS AGREEMENT.  
RENTER: X  
PERMISSION GRANTED TO OPERATE VEHICLE ONLY IN THE STATE OF RENTAL AND THE FOLLOWING STATE(S): **DE STATES**  
OPERATION IN ANY OTHER STATE OR COUNTRY WILL AFFECT YOUR LIABILITY AND RIGHTS UNDER THIS AGREEMENT.

GROSS	LICENSE NO.	
PCAR	PCAR	
MILE-AGE	IN OUT	
DRIVEN		
CONDITION AGREED TO: X RENTER FROM DAMAGE		
		
X = DENT	-- SCRATCH	○ = MISSING
OUT E 1/8 1/4 3/8 1/2 5/8 3/4 7/8 F	DATE TIME AMOUNT	

NO DAMAGE  
X Declines DW  
RENTER ACCEPTS OPTIONAL PERSONAL INCIDENT INSURANCE COVERAGE FOR PERSONAL EFFECTS COVERAGE (PAI/PEC) AT FEE SHOWN IN COLUMN TO RIGHT SEE PAGE 18. RENTER X  
X Declines PAI/PEC  
RENTER ACCEPTS OPTIONAL SUPPLEMENTAL LIABILITY PROTECTION (SLP) AT FEE SHOWN RENTER X  
X Declines SLP  
RENTER X  
I HAVE READ AND AGREE TO THE TERMS AND CONDITIONS ON PAGES 1 THROUGH 4 OF THIS AGREEMENT AND BY MY SIGNATURE BELOW I AM AUTHORIZING THE RENTAL COMPANY TO BILL ME FOR CHARGES ON MY CREDIT CARD(S) AND/OR DEBIT CARD(S) FOR ADVANCE DEPOSITS, INCREMENTAL AUTHORIZATIONS, SECURITY DEPOSITS, CHARGES INCURRED, AS WELL AS PAYMENTS DECLINED BY A THIRD PARTY TO WHOM BILLING IS PROVIDED. I ALSO AGREE THAT THE DRIVER'S LICENSE IS PRESENTED AS CURRENTLY VALID AND IS NOT SUSPENDED, REVOKED, CANCELLED OR SURRENDERED.  
RENTER: X DATE: 1/28/07  
RENTER # 7507N  
EMP. # 7507N  
AMOUNT: 217.68  
1/28/07(6):

**OPTIONAL PRODUCTS NOTICE:**  
OUR CONTRACT CONTAINS A SECTION TITLED "OPTIONAL PRODUCTS". IT DESCRIBES THE TYPES OF INSURANCE COVERAGE YOU MAY PURCHASE. THESE INSURANCES INCLUDE ACCIDENT INSURANCE, PERSONAL EFFECTS COVERAGE, AND SUPPLEMENTAL LIABILITY PROTECTION. BEFORE DECIDING WHETHER TO PURCHASE ANY OF THESE PRODUCTS, YOU MAY WISH TO DETERMINE WHETHER YOUR PERSONAL INSURANCE OR CREDIT CARD PROVIDES YOU COVERAGE DURING THE RENTAL PERIOD. THE PURCHASE OF ANY OF THESE OPTIONAL PRODUCTS IS NOT REQUIRED TO RENT VEHICLE.

OWNER IS AN AFFILIATE OF ENTERPRISE RENT-A-CAR COMPANY, WHICH OWNS ALL RIGHTS TO ENTERPRISE NAMES AND MARKS.

© ENTERPRISE LEASING COMPANY - SOUTH CENTRAL, INC., INC.

REB # 942633

DAY = 24 HOUR PERIOD

2 NO CHARGE FOR MILES

HOURS @ 10.00/HOUR

DAYS @ 39.99/DAY

E 52.81 PER DAY

ADDL DRV 10.00/DAY

DW 14.99/DAY

PAI 3.00/DAY

SLP 10.99/DAY

FUEL @ 3.50/BALLON

AD/PER 10.00/DAY

SURCHARGE 7.0 %

## TOTAL CHARGES

## DEPOSITS

## REFUNDS

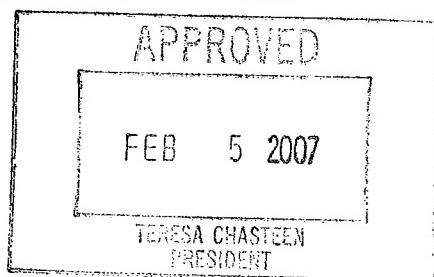
## CLOSED BY

Paid By	Cash	Check	Charg
RECEIPT OF CASH REFUND	DATE	AMOUNT	RECEIVED

Date	Invoice #
2/1/2007	988A

Bill To
WIN Teresa C. Chasteen, Ph.D., President 1000 Waterford Place Kingston, TN 37663

Description	Qty	P.O. No.	Terms	Project
		Due Upon Receipt		
CRC database creation for Alabama Strategic Compass	1		7,500.00	7,500.00
<i>ENTERED</i>				
Federal Identification Number is 54-1923150		Total	\$7,500.00	



Payments/Credits	\$0.00
<b>Balance Due</b>	<b>\$7,500.00</b>

PAID  
3/8/07

Date	Invoice #
10/9/2006	949A

<b>Bill To</b>
WIN Teresa C. Chasteen, Ph.D., President 1000 Waterford Place Kingston, TN 37663

	P.O. No.	Terms	Project
		Due Upon Receipt	
Description	Qty	Rate	Amount
30% Retainer for JobsEQ and the WIN Strategic Compass for Alabama	225,000	0.30	67,500.00
Federal Identification Number is 54-1923150			<b>Total</b> \$67,500.00
			<b>Payments/Credits</b> \$0.00
			<b>Balance Due</b> \$67,500.00




**PAID**  
10/27/06

Ref# 15134

# **EXHIBIT D**

## Statement of Work

Effective February 25, 2008, Chmura Economics & Analytics (Chmura) will enter into a retainer agreement with Worldwide Interactive Network, Inc. (WIN) for work performed on the Skills Bank application. Chmura will work a minimum of 20 hours per month on the tasks/services listed below for a rate of \$100 per hour. Chmura will allocate staff in order to complete at least 20 hours (4 hours for the last week of February) of work per month on the Skills Bank application. Note: at this time, Chmura does not have the staff to guarantee accommodating last minute, "emergency" requests beyond the initial 20 hours. Therefore, it is imperative to give advanced notice of additional work requests so that Chmura staff can be scheduled accordingly.

### Skills Bank Application Task/Service List:

#### **1. Data and Web Server Management**

Chmura will make necessary configuration changes and provide configuration support to IIS web servers and SQL Server databases servers as required by the Skills Bank. Chmura is not responsible for the server hardware, operating system, or other services running on these servers.

#### **2. Data Services**

Chmura will perform the following data services related to the Skills Bank:

- a. Bulk data import
- b. Data cleanup
- c. Data analysis
- d. Other data transformations

#### **3. Programming**

Chmura will provide programming services to make improvements and modifications to the Skills Bank including the Web (front-end), Database (back-end), and Reports.

#### **4. Application and Database Maps**

Chmura will provide WIN with application and database maps outlining the functional components of the Skills Bank application.

#### **5. User Documentation**

Chmura will create general front-end user documentation for use on all Skills Bank Sites.

#### **6. Source Code**

Chmura will provide a snapshot of the most recent source code to WIN. This will include Web source files, C# class files, Database queries, Report source files, and User Documentation source files.

#### **7. Training Support for WIN In-House Developer**

Chmura will make staff available to answer Skills Bank application technical questions from a WIN In-House developer.

In order to provide services #1 and #2 above, WIN will provide Chmura with VPN and Remote Desktop Access to the WIN servers that host the Skills Bank application.

The period of performance for this agreement is 3 months beginning on the effective date. At the end of the period of performance, Chmura and WIN will re-evaluate this agreement.



2-15-2008

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Leslie Peterson

(Date)

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Teresa Chasteen

(Date)

# **EXHIBIT E**

**From:** Fletcher Mangum [mailto:[fletcher@mangum-consulting.com](mailto:fletcher@mangum-consulting.com)]  
**Sent:** Wednesday, March 04, 2009 6:41 PM  
**To:** Teresa Chasteen  
**Subject:** Re: Copy of the letter

Teresa,

I apologize for the delay. The letter was with my attorney, Rob Brooke, and it took a while to catch up with him. The letter makes two accusations. The first is that I am working with you to develop a competitive application to JobsEQ. The relevant paragraph states:

"Chmura has reason to believe that you may be working with Worldwide Interactive Network, Inc. (WIN) to try to develop a software application that would compete with Chmura's proprietary software product, JobsEQ. Any software application you may write or contribute to will be subject to close scrutiny by Chmura to determine whether such software infringes on JobsEQ. Furthermore, Chmura will take all legal action necessary to protect its software and to compensate itself for any damages it incurs as a result of such infringement."

The second accusation regards a separate matter. It asserts that I made statements to a client here for which she and I have both done work that were intended to harm her. I disagree with that assertion and am prepared to contest

it if necessary.

My attorney has reviewed both accusations and based on the circumstances and the nature of the threat (the letter was sent regular mail, with no demand for a response, by an attorney who specializes in labor law, from a firm that specializes in estate planning), deems them a simple attempt to intimidate me. That said, he has advised me not to roil the waters by distributing the letter in its entirety or by discussing the second accusation.

This is frankly a very uncomfortable area for me. I'm a researcher more than anything else and have never been in this kind of situation before. As a result, I feel obliged to follow the advise of my attorney.

Best regards,

Fletcher

On Tue, Mar 3, 2009 at 3:21 PM, Teresa Chasteen <[tchasteen@w-win.com](mailto:tchasteen@w-win.com)> wrote:

Hi Fletcher—

Can you please send a copy/scan of the letter from Chmura. It will only be shared with attorney, John Brock to write the indemnification language.

Thanks, Teresa

**Teresa C. Chasteen, Ph.D.**

**President, Worldwide Interactive Network (WIN)**

**1000 Waterford Place**

**Kingston, TN 37763**

**888-717-9461 ext. 2207**

**tchasteen@w-win.com**

--  
A. Fletcher Mangum, Ph.D.  
Managing Partner  
Mangum Economic Consulting, LLC  
50 Pear Street  
Richmond, VA 23223  
804-771-5338